Steven R. Stanley
Mayor

City of SHEFFIELD Center of the Shoals

February 15, 2021

Mr. Kenneth Boswell, Director
ADECA
P.O. Box 5690
Montgomery, AL 36103-5690

RE: FY2021 RTP Application, Tuscumbia Landing NHS Trail

Dear Director Boswell:

I am pleased to present to you a copy of the City of Sheffield's FY2021 Recreational Trails Program Application.

The purpose of this application is to create a trail at the Tuscumbia Landing National Historic Site which is part of the U.S. National Park's Trail of Tears National Historical Trail system. The proposed trail will be an integral part of a new interpretive center which will also be built on the site. Tuscumbia Landing is an important piece of our nation and state's history.

Tuscumbia Landing, located near downtown Sheffield, was Alabama's first site on the Trail of Tears National Historic Trail System. The landing was once part of the Tuscumbia-Courtland-Decatur railway. During the time period of the Indian Removal, the railway was used to transport Native Americans to Tuscumbia Landing, where they would be loaded into boats to travel downstream. Tuscumbia Landing was also the site of Civil War activity. It is situated along the Tennessee River and is being redeveloped as part of a larger project known as Inspiration Landing which will bring visitors from around the state and country.

This proposal will help teach this chapter of our nation's history and provide an ADA accessible trail to a scenic area and a culturally significant resource. Please see our attached photographs. The project is essential to our efforts in providing recreational activities to visitors and citizens of the Shoals area.

This project has wide community support from individuals in Sheffield and throughout the Shoals Area who use existing facilities in Sheffield and would utilize the extended trail system. Therefore, I look forward to your favorable consideration of our request.

Please contact me if you have any questions regarding this application.

Sincerely,

Steve Stanley

Steve Stanley
Mayor

Application Cover Sheet

Applicant's Name (Organization): City of Sheffield

Address: PO Box 380

Sheffield

Alabama ZIP+4: 35660

County: Colbert

FEI Number: 63-6001364

DUNS Number: 075459230

Project Title: Tuscumbia Landing Trail

Project Description: Tuscumbia Landing Trail to be built on historic site and will be a featured part of the new interpretive center to be built as part of development.

Park Name, if applicable: Trail of Tears National Historic Trail: Tuscumbia Landing Site

Park (project location) Address: Park West (Blackwell Road/Fontana Street)

ZIP+4: 35660

Latitude and Longitude (deg/min/sec): 34° 44' 55.3056" N87° 43' 34.464" W

Congressional District (for project location): 4

State Senate District (for project location): 1

State House District (for project location): 3

Applicant Contact Person and Title: Steve Stanley, Mayor

Phone and Email: 256-383-0250, mayor@sheffieldalabama.org

Grant Administrator or Other Contact, Title, and Organization: Beau Cooper, Regional Planner

Phone and Email: 256-389-0595, rcooper@nacolg.org

APPLICATION CHECKLIST

Please use this checklist to ensure all required application documents are included prior to submitting to ADECA. **Incomplete applications will not be processed.**

Letter on entity letterhead signed by the Chief Elected Official	X
Application Cover Sheet (Page 9)	X
Resolution adopted by the legal entity of the applicant authorizing the submission of the application and committing all matching funds required to complete the proposed project	X
A narrative description of the proposed project and responses to each of the application rating criterion (Pages 10-13)	X
Project Cost Estimate (Page 14)	X
Detailed Project Budget with Descriptive Narrative	X
Schedule of project activities necessary for project completion to include measurable milestones (18-month period beginning July 2021)	X
Preliminary Site Plan	X
Location/Vicinity Map	X
Verification of SAM.gov Registration	X
Environmental Assessment:	X
Concurrence from the U.S. Army Corps of Engineers	
Concurrence from the U.S. Wish and Wildlife Service	
Concurrence from the Alabama Historical Commission	
Approval to cross a public highway or a public utility right-of-way (if applicable)	
Water obstruction & encroachment permit (if applicable)	
Hazardous materials survey if real property is to be acquired with grant funds	
Environmental Assessment (if applicable)	
Copy of deed to property, plat, and/or legal description of the property proposed for purchase and/or development NOTE: If real property is to be acquired with grant funds, the acquisition must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 170 (The Uniform Act). Implementation regulations for The Uniform Act are found in 49 CFR Part 24. **You may not acquire property until after the grant agreement has been executed and consultation with ADECA staff has occurred.**	X
Signed statement from landowner expressing support (This is applicable if the applicant and landowner are **not** the same. **A recorded easement allowing trail construction will be required from the landowner** before construction begins.)	N/A
Environmental Screening Form and Environmental Checklist (Pages 17-20)	X
Letters of endorsement, support, and commitment; other documentation of citizen participation	X

You must include a copy of this completed checklist with your application. Please see the following website for electronic versions of the forms: http://www.adeca.alabama.gov/Divisions/ced/Recreation/Pages/Programs.aspx.

City of Sheffield

Sheffield, Alabama 35660

OFFICE OF CITY CLERK & TREASURER
(256) 383-0250

600 N MONTGOMERY AVENUE
PO Box 380

RESOLUTION
CITY OF SHEFFIELD
RTP APPLICATION

WHEREAS, the City of Sheffield proposes to construct a trail at the Tuscumbia Landing National Historic Site; and

WHEREAS, the Recreational Trails Program is limited to funding a maximum of eighty percent (80%) of a maximum grant limit of $400,000 for non-motorized trails;

NOW THEREFORE BE IT RESOLVED, that the City of Sheffield, hereby makes application to the Alabama Department of Economic and Community Affairs for grant assistance under the Recreational Trails Program for the development of a trail at the Tuscumbia Landing National Historic Site in the amount of $400,000 of a $400,545 total cost project; and

BE IT FURTHER RESOLVED, that the City of Sheffield will hold in reserve 20% ($80,000) of the proposed cost for the purpose of matching the Recreational Trails Program Fund application and agrees to cover all cost overruns; and

BE IT FURTHER RESOLVED, that upon grant award, the City of Sheffield understands that it will sign assurances to comply with all applicable Federal and State laws, rules and regulations.

Adopted this the 2nd day of March, 2021.

SEAL

CITY OF SHEFFIELD
STATE OF ALABAMA
SEAL

Karen Mathis
City Clerk

Steven A. Stanley
Mayor

Project Descriptive Narrative

Provide a brief, yet informative, description of the proposed project and address each evaluation criterion on the following pages (provide additional information and documentation as needed to support your response to each evaluation criterion).

Project Information

Name of Project: Tuscumbia Landing Trail

Trail Length in Linear Feet (L.F.): 1,200 Trail Width: 8 feet

Trail Surface Type: Crushed Aggregate

Application Type:
- ☐ Non-motorized for a Single Use
- ☒ Non-motorized for Diverse Use
- ☐ Motorized
- ☐ Educational

Type of Applicant:
- ☒ City/Town
- ☐ State
- ☐ County
- ☐ Other

Total Estimated Project Cost	$ 400,545
Grant Amount Requested	$ 320,000
Total Local Match	$ 80,545
Cash Match	$ 80,545
In-Kind Match	$ 0
Donation	$ 0

Brief Description of the Project:

The City of Sheffield plans to construct a trail at the Tuscumbia Landing National Historic Site which is part of the U.S. National Park's Trail of Tears National Historical Trail system. The proposed trail will be an integral part of a new interpretive center which will also be built on the site.

Please address each evaluation criterion (100 Total Available Points).

1. **Describe the degree to which the project's scope and feasibility meet the project area's recreational needs.** (**Key Consideration:** Does the project appear to be feasible and incorporate a good project design with consideration given to the natural and cultural environment in which the project is located and appropriate consideration given to identified needs and project benefits?) **10 Points Available**

   The City of Sheffield is the second largest municipality in Colbert County with a total population of 9,039 residents. Its geographic location in relation to its adjacent sister cities of Florence, Muscle Shoals and Tuscumbia has earned its title of the "Center of the Shoals."

   In the last 15 years the city has embarked on a major plan to revitalize its historic downtown. Key elements in this revitalization include restoring the Old Ritz Theater,

streetscape and lighting improvements, interconnecting the downtown area with Sheffield's large public water frontage along Pickwick Lake through the creation of walking/biking trails to Riverfront Park a renovated downtown library as well as the completion of a previous RTP trail project that connected Riverfront Park to one of the neighbohoods that overlooks the Tennessee River.

The city's most recent and ambitious project is a multi-use development called Inspiration Landing. When completed, it will contain restaurants, small businesses, hotels, a civic center/music hall as well as a marina, open air concert areas, and a large residential neighborhood. Recently, all roads and infrastructure for this development have been completed and the project is moving on to it's second phase.

The proposed RTP project would further the efforts of the city to expand its comprehensive recreational trail system. The project will enhance and highlight Tuscumbia Landing - a National Historic Site that is part of the Trail of Tears National Historic Trail System.

2. **Describe the ways in which the project provides for the greatest number of compatible recreational purposes.** (**Key Consideration:** An important concern is that the project will enhance the quality and quantity of recreational trail opportunities available in the community or region. Points will be given to projects with connectivity to other trails and/or parks, environmental education and preservation, and economic development opportunities.) **10 Points Available**

   The project will be used for pedestrian leisure and/or fitness activities. It will help visitors to the historic site get a better sense of the area and it's importance in our nation's history. The trail will accommodate bicycle and pedestrian traffic. No motorized vehicles will be allowed on the trail. The project is an essential element to the long-range recreational program in Sheffield.

3. **Describe the ways in which the project provides a new, unique, or more effective means for making trail opportunities available to the public.** (**Key Consideration:** This criterion includes projects of national, regional, and local demonstration value. The most important concern is whether the grant recipient is committed to trying an approach that is new at the local level. Additional points are awarded for nationwide applicability and statewide or regional value. The applicant must commit to documenting the results of the demonstration and identify the method to be used in documenting the results.) **10 Points Available**

   Tuscumbia Landing is like no other trail in the Shoals area. The site has been neglected over the years and restoring it and creating a trail from the proposed visitor center to the sites of interest along the trail will allow users to learn about the history of the area while enjoying views of the Tennessee River. The proposed project will be accessible to bicycle and pedestrians and is designed to be ADA compliant. The completion of the trail allows users much greater trail options in terms of learning history and scenery.

4. **Describe the ways in which the project facilitates the access and use of trails by**

persons with disabilities, older citizens, economically disadvantaged, and other special populations or groups. (**Key Consideration:** Whether the project will expand recreation opportunities for special populations with recreation deficiencies.) **10 Points Available**

Both surface and grade will be designed to meet handicapped accessible (ADA) standards. Located northwest of downtown Sheffield, the project is within easy access to the Senior Citizens Center, Sheffield Recreation Center, the Sheffield High School and the public housing authority. Many of these sites have been made accessible through other means using ADA and FHWA compliant bicycle routes and sidewalks. Sheffield is a city with a higher concentration of elderly and low income than the State or nation. Thirty percent of the population of Sheffield is age 55 or older, compared to 25.7% of the population of the State of Alabama and 24.5% of the nation's population. In Sheffield, 21.9% of all people had experienced poverty in the prior year compared to 17.6% for the State of Alabama and 14.3% for the nation. Poverty among children was particularly disconcerting with Sheffield's children under 18 experiencing poverty in the past year at a rate of 38.9% compared to 25.1% for the State and 20.0% for the nation (U.S. Census Bureau, American Communities Survey 2007-2011). Investment in Sheffield is likely to reach a higher proportion of elderly and low income individuals than in many other areas of the State.

5. **Describe the ways in which the project creates opportunities for new partnerships between trail users, private interests, and public agencies within the project area.** (**Key Consideration:** The major concern is that the project is a component of an integrated effort to enhance economic revitalization and community conservation. Points will be given to applicants providing evidence of cooperative efforts with trail user groups and/or multiple public meetings.) **10 Points Available**

The project is part of the city's overall revitalization strategy and provides recreation access along the riverfront through interesting scenic and historic properties; therefore, it is supported by the City of Sheffield and the Sheffield Redevelopment Authority, which have championed projects related to walking and cycling in downtown Sheffield and throughout the city, including improvements to sidewalks and streetscape downtown and investment in bicycle and pedestrian routes from downtown to riverfront park. The potential to generate additional hiking, walking, and cycling opportunities in Sheffield has driven support from outdoor recreation groups including local Boy Scout troops and the local cycling club. In addition, the tie in to architecture of the Depression Era generates support from the Historic Landmark, tourism, and arts communities in the Shoals.

In addition to the previously mentioned parternships. The City of Sheffield has done it's due diligence with a full environmental review performed by AST Environmental as well as a full archaeological assessment done by the Office of Archaelogical Research at the University of Alabama. These partnerships have been a key part of ensuring that this historic site will be properly preserved.

6. **Describe the ways in which the project uses the grant funds to leverage other public or private investments (in the form of services and materials as well as**

dollars). (**Key Consideration:** The major concern is whether actual leveraging is assured or the potential for leveraging is good, outside of any funds committed for the initial grant match. Points will be given for applicants committing double the minimum local match or higher. Supporting documentation must be included in the application.) **10 Points Available**

The City of Sheffield is obligating a total of $80,109, which is 20% of the total project cost from local funds. The size of the total local commitment is demonstrative of the significance of the project to the Shoals area.

7. **Describe the degree of commitment to continue operation and maintenance of the project. Include an operation and maintenance plan detailing the amount of money needed to operate and maintain the trail/facility after project completion and identify who will be responsible for these activities.** (**Key Consideration:** Whether the grant recipient is willing to commit to continue the maintenance and operation of the facilities and whether the applicant provides a realistic operation and maintenance plan/budget. Additional points will be awarded to applicants demonstrating innovative funding measures for trail maintenance.) **10 Points Available**

Maintenance of the project will be provided by the Sheffield Park and Recreation Department. The department is overseen by a five member separately incorporated recreation board that was created in 1949. The Sheffield Recreation Department has seven full-time and four part-time employers. The department also employs fourteen seasonal workers. Supervision of the department of the park system is provided by Ricky Canup who has over 17 years of experience. Mr. Canup is a member of both the Alabama Recreation and Parks Association and the National Recreation and Parks Association. The City of Sheffield annually allocates over $500,000 to its park and recreation department for operation and maintenance of its system. The department also has the necessary equipment to maintain the project.

As evidenced by its upkeep and maintenance of its existing park system, the city has the necessary resources to maintain and operate the proposed trail.

8. **The degree to which community involvement is addressed: i.e., (A) Project idea originated with trail users or a community group that has substantial knowledge, and (B) The private sector (including individual citizens, community groups, and/or local business enterprises) has participated in the development of the proposed idea and has made commitments of labor, money, or materials to support project implementation.** (**Key Consideration:** The objective is to determine if the project is responding to citizen-identified needs. The priority of the project to users is evidenced by citizen support for the idea. Points will be awarded to applicants demonstrating that the project concept was originally proposed at the grassroots level and, especially, for extensive citizen or private organization involvement in project development and support in project implementation as well as applicants demonstrating extensive involvement and participation from citizens and interest groups during all phases of application development and commitments beyond. Supporting documentation must be included in the application.) **10 Points Available**

As part of a study originally commissioned by the Tennessee Valley Authority, the City of Sheffield and the City of Florence; the proposed project represents another important phase of a "Shoals Area Recreational Trail" system. See previously noted article from the Times Daily, November 13, 1992. Since that time, elements of the trail that have been completed include: walking path on Patton Island Bridge, Riverfront Park Trail, Whipporwill Trail and the ALDOT bike/pedestrian trail linking downtown Sheffield to both Riverfront Park and Montgomery Avenue to the Sheffield Standpipe Overlook. The project has strong community based support from individuals and groups throughout Sheffield and the greater Shoals area.

9. **Describe in detail how the trail will be managed. Include discussion on season length, hours of operation, limitations on use, enforcement provisions, and scheduling. 10 Points Available**

   Even though it is a National Historic site, the trail will be managed by the Sheffield Parks and Recreation Department. The Sheffield Police Department will provide security for the facility. The police department will provide frequent patrols through the park which is approximately one half mile from police headquarters at City Hall. The trail will be open from sunrise to 10:00 p.m. seven days per week year-round.

10. **Identify and describe the service area of the project. Approximately how many people do you propose to serve with this project? Identify other trail resources in the service area by trail type (motorized, non-motorized, multi-use), distance, location in relation to the proposed trail, and ownership. (Key Consideration:** The RTP was created to address trail needs in the urban and rural areas of the state. In order to assess the need for additional trails it is first necessary to identify the quantity and location of existing resources within the service area. It is also necessary to establish a service area – either population or resource based. For example, a population-based service area could be a neighborhood, school district, or political jurisdiction whereas, a resource-based service area might be defined along a linear greenway, water course, or unique natural/cultural area. However, in both instances, an estimate of the number of beneficiaries should be provided. Please identify how the project service area was determined.) **10 Points Available**

    Having the only trail as part of a National Historic Trail in the area, Tuscumbia Landing serves a far greater area than that found within the corporate boundaries of Sheffield. The project is easily accessible to all three major cities in Colbert County (Sheffield, Tuscumbia and Muscle Shoals). The project will serve a total of 147,970 people in the Shoals Metropolitan Area. Sheffield is continuing to experience growth as the result of the steps taken towards revitilzation as well as Inspiration Landing. See attached chart of "Average Annual Attendance" of the next closest trail located in Sheffield.

Riverfront Park
Average Annual Attendance

Activity	Number of Participants	Frequency	Annual Usage
Walking Trail	50	Per day x 365 days	18,250
Fishing Pier	35	Per day x 180 days	6,300
Boat Ramp	40	Per day x 270 days	10,800
Large Pavilion	30	Per day x 365 days	10,950
Small Pavilion	10	Per day x 365 days	3,650
Boundless Playground	25	Per day x 365 days	9,125
Casual Visitors	40	Per day x 365 days	14,600
Splashpad	15	Per day x 120 days	1,800

Total Average Annual Attendance – 75,475

NOTE: Property acquired with RTP funds must remain open to the public in perpetuity. Should the property cease to be open to the public for trail use, the applicant must repay the RTP 80% of the fair market value of the property at the time of the change in use. If the project is located on an easement or on leased land, the minimum timeframe for the easement or lease is 25 years. The project must remain open for public access for the use for which the RTP funds were intended during that time. For development projects on applicant owned property, the project must remain open for public access for the use for which the RTP funds were intended for a minimum of 25 years.

Total Project Cost: $400,000 Funds Requested: $320,000

Important Note: The maximum grant amount by trail type is **$200,000.00** for non-motorized, single-use trails; **$400,000.00** for non-motorized, diverse-use trails; **$500,000.00** for motorized trails; or **$87,489.00** for education projects.

The applicant certifies that the data contained in the application is true and correct; the application has been duly authorized; and, the applicant understands that incorrect or incomplete information may cause the application to be rejected.

Steven R. Stanley
(Chief Elected Official's Signature)

Mayor
(Title)

3-2-2021
(Date)

Project Cost Estimate

The Recreational Trails Program provides **80/20 matching** fund grants. That is, the RTP will fund up to 80 percent of the project cost and the grant recipient must provide at least 20 percent in the form of cash, in-kind, and/or donated contributions.

Eligible Costs

1. Design, engineering, construction oversight services (**may not exceed 10% of the total construction cost**)
2. Direct labor
3. Special tradesmen secured under a service purchase contract
4. Rental of equipment
5. Construction contracts
6. Project materials
7. Signage[1]
8. Land acquisition
9. Professional project administration (grant consultant) (**may not exceed 5% of total project cost**)

PROJECT DEVELOPMENT BUDGET

BUDGET ITEM	TOTAL	RTP SHARE	MATCHING SHARE
Acquisition			
Construction Contracts	$348,300.00	$278,640.00	$69,660.00
Equipment Rental			
Labor			
Signage			
Supplies/Materials			
Administration	$17,415.00	$13,496.00	$3,919.00
Engineering	$34,830.00	$27,864.00	$6,966.00
TOTAL PROJECT COST	**$400,545.00**	**$320,000.00**	**$80,545.00**

Environmental Screening Form (ESF)

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[1] Signs which function as traffic control devices must conform with the Manual on Uniform Traffic Control Devices (MUTCD). Part IX of the MUTCD, Traffic Controls for Bicycle Facilities, covers the bicycle related signs, pavement markings, and signals which may be used on highways or bikeways. Part IX is applicable to shared use paths (nonmotorized multiple-use trails which may provide a transportation purpose). The publication Standard Highway Signs has the detailed drawings for the highway signs prescribed in the MUTCD. These documents are available for purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Signs which do not function as traffic control devices are not subject to the MUTCD. However, informational signs and kiosks must take into consideration the needs of various users, such as: people who are blind or who have low vision, people who use wheelchairs, and children.

Engineers Estimate
March 1, 2021
Scope of Work: Tuscumbia Landing Trail

Engineers Estimate of Cost: This cost estimate represents the Engineers Estimate of Costs as of the date of this estimate. The costs may escalate or deescalate during the time between the date of this estimate and the actual work being performed. The estimate is based on the best information available as of the date of the estimate and does not account for possible changes in the scope of

Item No.	Description	Quantity	Units	Unit Price	Total Cost
1	Tree Removal	1	EA	$ 80,000.00	$80,000.00
2	Unclassified Excavation	1	LS	$ 12,500.00	$12,500.00
3	Aggregate Surfacing (Crushed Aggregate Base, Type A) (appox. 8" thick)	600	Ton	$ 50.00	$30,000.00
4	Landscape Timber with Rail	2400	LF	$ 12.00	$28,800.00
5	Tressle/Boardwalk	1	LS	$ 65,000.00	$65,000.00
6	Clear and Regrade Old Wagon Trail and Connector Trail	1200	LF	$ 35.00	$42,000.00
7	Wayside Signs, Directional Signs, and Wayside Exhibits	1	LS	$ 45,000.00	$45,000.00
8	Erosion Control	1	LS	$ 25,000.00	$25,000.00
9	Mobilization	1	LS	$ 20,000.00	$20,000.00
				Subtotal	**$348,300.00**

Administration (NACOLG)	**$17,415.00**
Construction Engineering and Inspection	**$34,830.00**
Total	**$400,545.00**

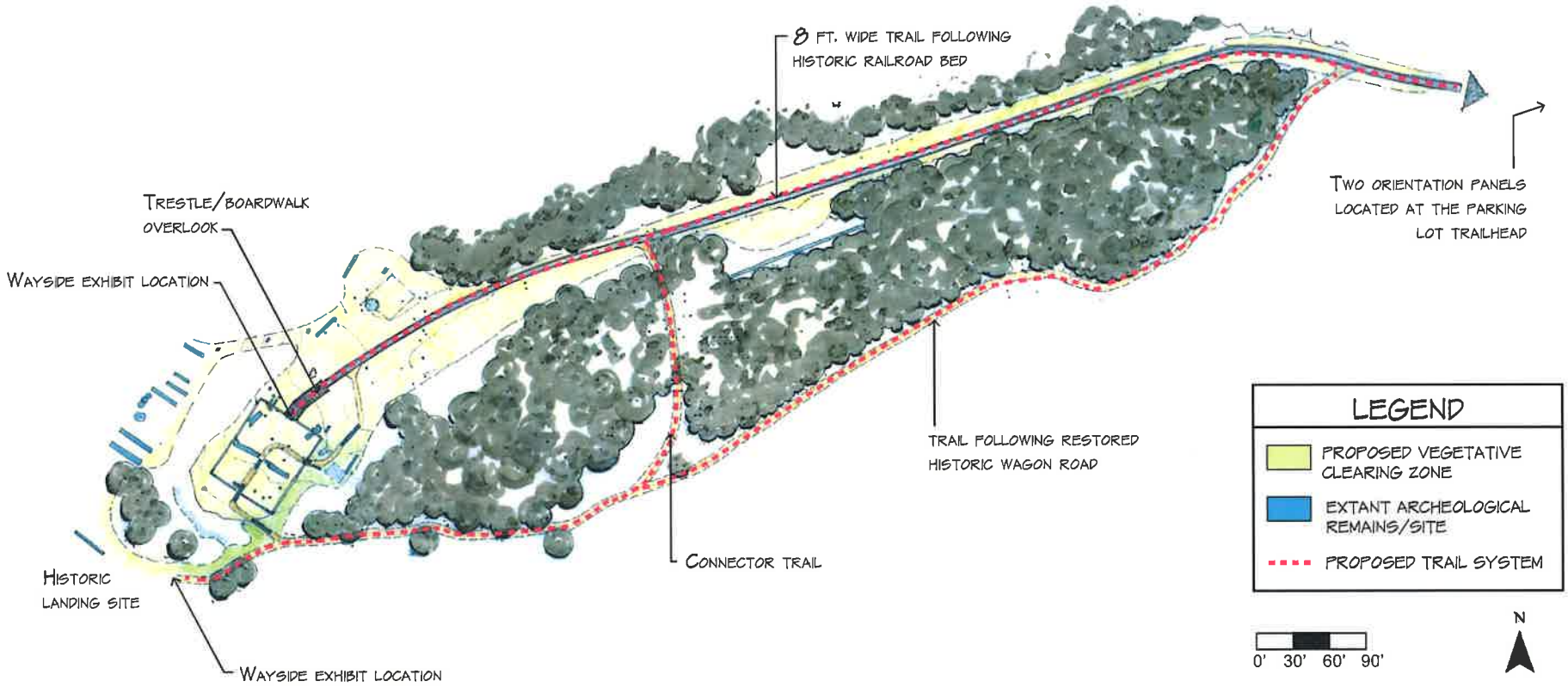
Schedule of Project Activities

Tuscumbia Landing Trail

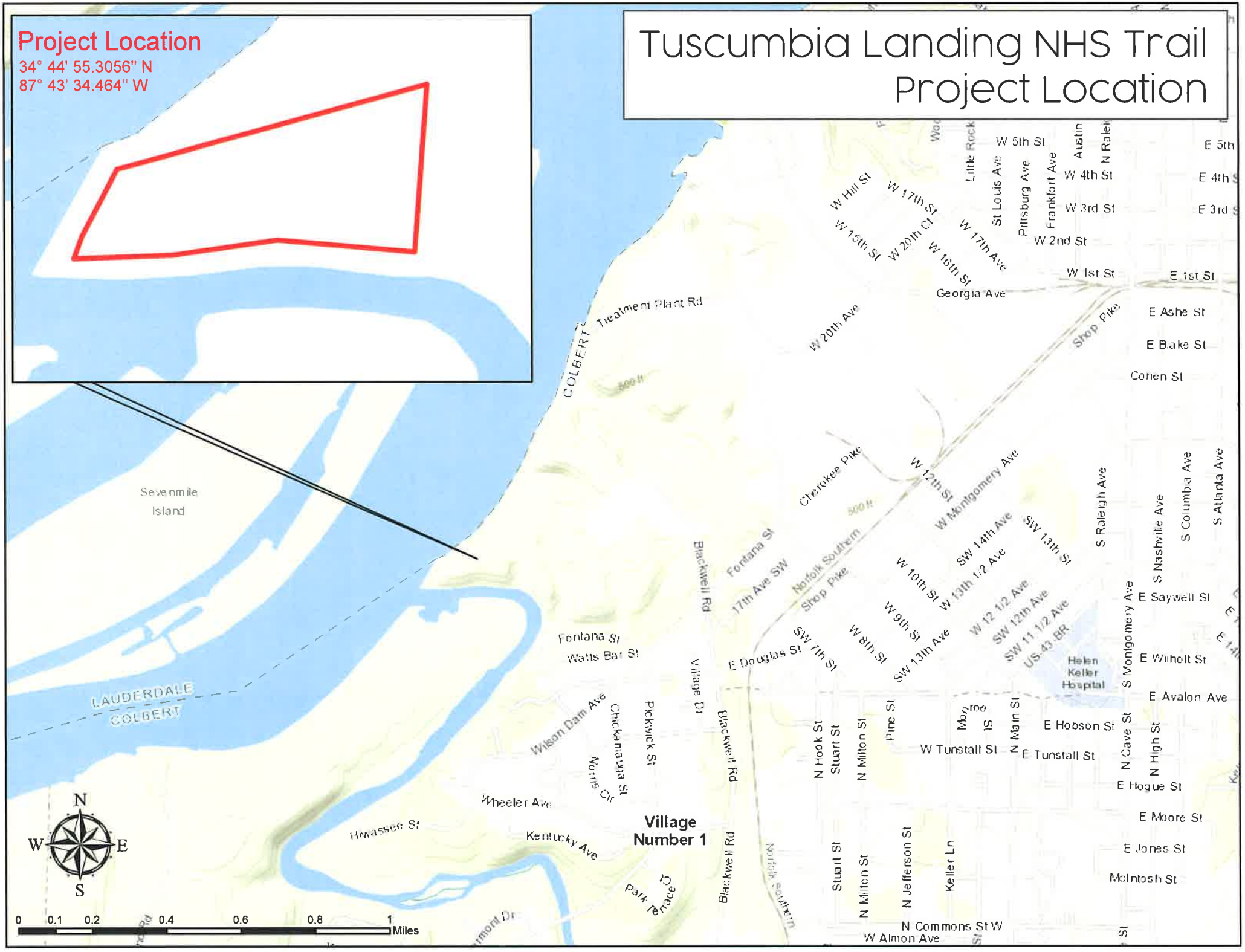
Field Survey & Engineering Design - 6 months/July 2021 – January 2022
Advertisement for Bids - 2 months/January 2022 – March 2022
Award and Execution of Contract - 2 months/ March 2022 – May 2022
Construction - 9 months/ May 2022 – January 2023
Project Closeout – 2 months/January 2023 – March 2023
Total Project Completion – 15 months

Site Plan
& Vicinity Map

Revised Trail System and Interpretive Media:



Tuscumbia Landing NHS Trail
Project Location



Tuscumbia Landing

Revised Strategy for the Trail System and Interpretive Media

Present day view of the Tennessee River from Tuscumbia Landing

Present day Tuscumbia Landing

Trail of Tears at Tuscumbia Landing

Revised Strategy for the Trail System & Interpretive Media

Produced by:
National Park Service
National Trails Intermountain Region
Santa Fe, NM

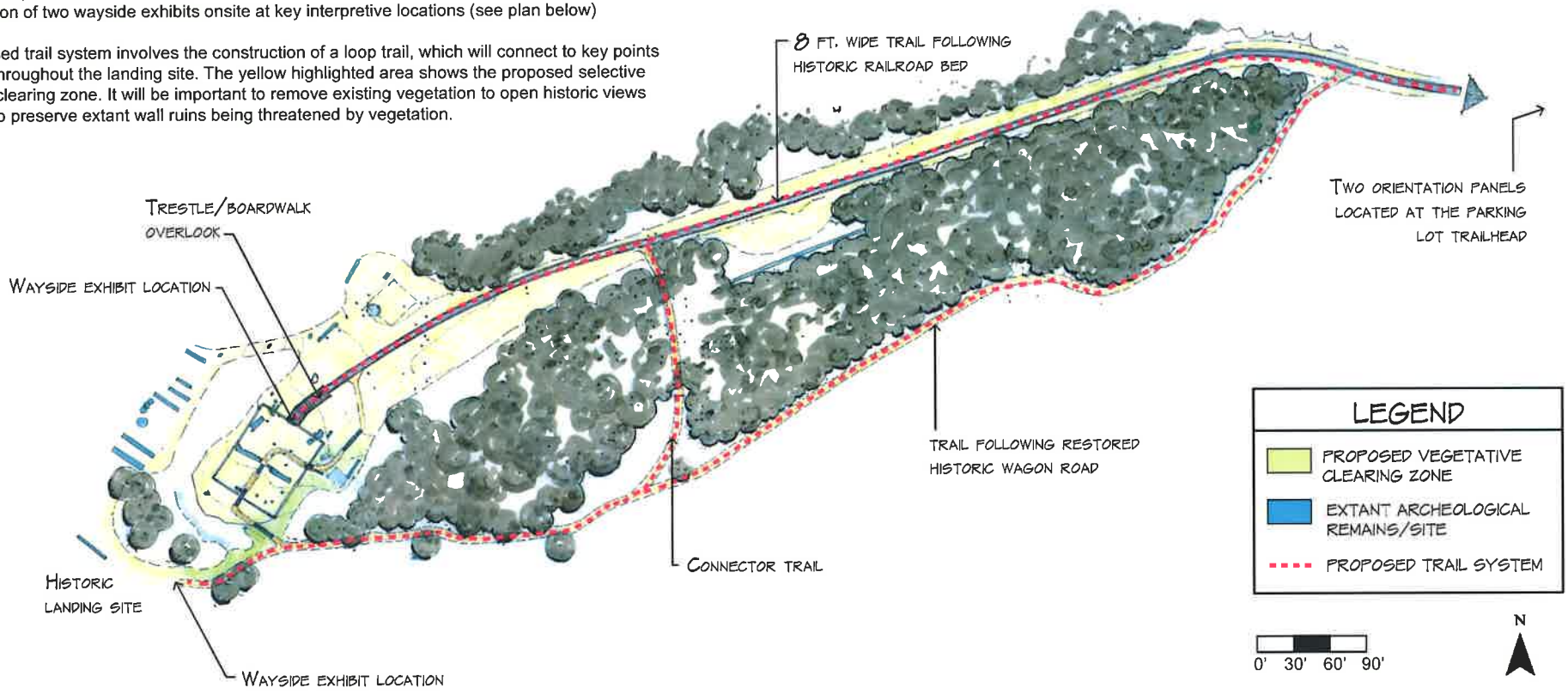
Revised Development and Interpretive Media Suggestions

Limestone formations at Tuscumbia Landing

Revised Trail System and Interpretive Media:

- Selective clearing of existing vegetation around the trail, warehouse site, and shoreline
- Construction of the main loop trail network connecting to the existing wagon road
- Construction of an approximately 35' long trestle/boardwalk overlook
- Grading and surface improvement of the wagon road trail section
- Improvement of existing parking lot, development of a small trailhead, and installation of two orientation panels at the trailhead
- Installation of two wayside exhibits onsite at key interpretive locations (see plan below)

This proposed trail system involves the construction of a loop trail, which will connect to key points of interest throughout the landing site. The yellow highlighted area shows the proposed selective vegetation clearing zone. It will be important to remove existing vegetation to open historic views as well as to preserve extant wall ruins being threatened by vegetation.



Tuscumbia Landing:

Site Concept Description

Overall Concepts

The conceptual plan for Tuscumbia Landing is designed to create a quiet, contemplative, and commemorative space, which is both sensitive to the historical period of time during removal and to the site as it exists now. It is based upon the goals and objectives that were developed during the Tuscumbia charette held in July of 2011.

The following paragraphs describe in detail the individual design features for site development.

Selective Clearing: For the Preservation of Archeological Remains and Visitor Use

Over the past decades, Tuscumbia Landing has returned to its natural forested state. Although this lends a serene and quiet feel to the site, it also poses a threat to many of the archeological features present here. Root systems are currently pushing their way up and destroying what remains of the old warehouse foundations and floating wharf piers. If allowed to continue, what is left of these historical features will be lost forever. For this reason, the plan suggests that clearing be done in these areas in order to protect any remaining important historic remnants. Specific thinning methods will need to be addressed in the construction documents in order to minimize impacts to buried and surface archeological remains during the development of the site.

In addition to clearing for archeological purposes, the site will also need to be selectively cleared for visitor use so as to better reflect its condition during the historic period of use. In its present state the forest is very thick throughout much of the landing site. Clearing will also need to be done in order to allow for visitor movement and use. It is prescribed that the existing vegetation is selectively cleared for this purpose and also where there is opportunity to provide visitors with views and overlooks into important historic sites and of the Tennessee River.

Trail System / Circulation

The circulation for the site was designed to follow a counter clockwise path that retraces the Trail of Tears walk that occurs here every year representing the "journey home". It is intended that visitors will begin their exploration of the landing site by viewing orientation exhibits providing important context about Tuscumbia Landing and the Trail of Tears.

The main trail entering the site will follow the historic railroad lines, heading to an ADA accessible warehouse trestle/boardwalk overlook.
The overlook will provide a view for visitors of what remains of the historic warehouse, which was present when the detachments were brought through this site. The trestle/boardwalk itself is designed to accurately reflect the manner and elevation that the historic railroad used to enter the warehouse depot building.

From the overlook the trail splits off to the left descending into and through the warehouse's archeological remains and then onto the landing itself. Visitors will be retracing the route of Indian removal, walking the historic railroad path through the warehouse depot area, and on to the river landing. This will be a visceral and provocative retracement experience, which will bring people over the same extant steps and flooring from the original building. People will be encouraged to explore their surroundings. Visitors will also be able to connect to the original historic wagon road, which loops back up, cutting across the side of the hill and re-connecting to the main trail above.

Trestle/Boardwalk Overlook

The main path will lead directly to this trestle, which terminates where the third floor of the warehouse would have been. Historically this is also where the railroad tracks ended and goods were loaded or unloaded into the building for storage or transfer. From here, goods were transported from the trains into the warehouse to be stored or transferred to the landing. When ready for shipment, these goods were lowered down the inclined plane, which was attached to the third floor of the warehouse, to the wharves and waiting steamboats below.

This trestle overlook will also provide visitors a clear view of the warehouse site and archeological remains below. After the site is selectively thinned, from this vantage point visitors will also have a view of the Tennessee River and the route of Removal. A wayside exhibit could be placed at the end of the overlook relating to visitors the role of the railroad as the only one used in Removal, and the connection to the water route.

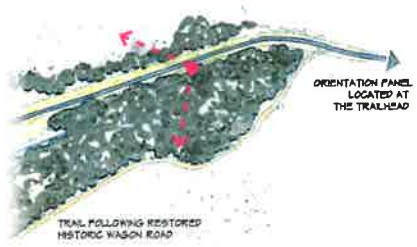
River Landing

The landing site and the archeological remains of the floating wharves are still visible today on the Tennessee River. This is where most of the detachments coming through Tuscumbia embarked, traveling on keel boats towed by large steamboats to Indian Territory. It is intended that this area along the river not have a structured path system. Instead, visitors will be encouraged to experience and explore for themselves. A wayside exhibit, placed at the end of the trail, will emphasize the departure point from the homeland. Once finished exploring, visitors can return to the trailhead and parking lot following the historic wagon road.

Historic wagon road

Example of the early style of rail line used by the T,C,&D Railroad.

Location of View

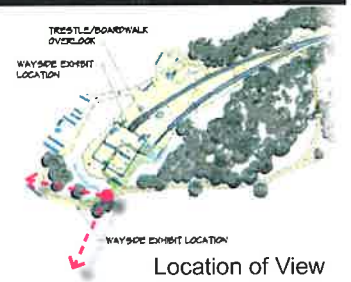


This perspective shows a view of what the simulated "railroad trail" leading out to the landing might look like. The trail will begin at the parking lot and main orientation area, and take visitors out to the landing site following the historic TC&D Railroad bed.

The main path will be constructed out of compacted crusher fines. The ability of the visitor to retrace the historic railroad removal route before arriving at the landing through this evocative landscape creates a highly provocative experience.

At the end of the landing site Spring Creek (left) meets the Tennessee River (right), providing spectacular views of the surrounding natural landscape. This is the same landscape that the Cherokee, Chickasaw, and Creek saw when they came down to the river, and as they stepped onto the keelboats on their journey to Indian Territory.

Present day visitors will enter this space and be met with the same view that the detachments saw as they left Tuscumbia Landing, providing a vicarious and provocative experience of the site's history. It is recommended that there be thinning of specific trees which impede this view, along with the removal of trees that are breaking up and disturbing existing archeological remains. A wayside exhibit will provide further information about the history of the site, but will be placed in a non-intrusive way so as to let the natural character of this place be the main experience. Listening to sounds of the river, feeling the dense air that envelops the site, and looking out to the west will in itself allow one to contemplate and reflect upon the history of this site and the spirit still connected to it.



Location of View

Interpretive Themes and Topics:
Tuscumbia Landing

Interpretation and the Retracement Experience

Interpretation is an activity that facilitates an intellectual and emotional connection between the interests of the visitor and the meanings of the resource. Interpretive planning addresses three main components: connection, enjoyment, and process. Most of the people who participate in interpretive activities (the audience) are choosing a specific site to visit during their leisure time.

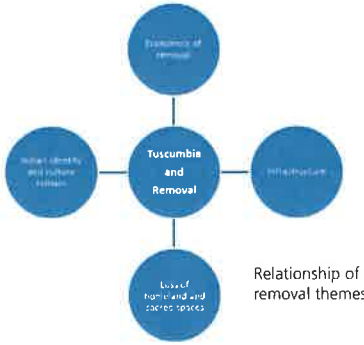
The stories of Tuscumbia Landing and the retracement trail experience fall within trail-wide themes for interpretation. The proposed retracement experience would provide context and scale to the experience of removal - how infrastructure, geography, distance, and politics affected removal.

Themes for the Trail of Tears National Historic Trail

Interpretive themes convey the trail's significance. Primary interpretive themes are the key ideas through which the trail's nationally significant resource values are conveyed to the public. They connect trail resources to the larger ideas, meaning, and values of which they are a part. They are the building blocks — the core content — on which the interpretive program is based. Each primary theme may connect to a number of specific stories. These elements are helpful in designing individual interpretive services, ensuring that the main aspects of primary themes are addressed. Trail-wide themes can be found in the *Trail of Tears National Historic Trail Interpretive Plan* (2004).

Theme for Tuscumbia Landing

Tuscumbia Landing represents one aspect of the devastating experience of the forced removal of three American Indian cultures from their homelands, made possible by the economy and demographic growth of the American South, advancements in technology, and the racism and politics of removal.



Relationship of removal themes

Sub-themes from Tuscumbia Landing

•**Economics of Removal:** The economy of the American South created an inexhaustible demand for land that, when aided by racism and hunger for wealth, required the removal of American Indian groups, such as the Cherokee, Chickasaw, and Creek.

•**Infrastructure:** The Tuscumbia, Courtland and Decatur Railroad, the first one west of the Allegany/ Appalachian Mountains and the only one used in Indian removal, provided the infrastructure that made Tuscumbia Landing an instrument of Indian removal.

•**Loss of Homeland and sacred spaces:** Indian removal resulted in great losses for the Cherokee, Chickasaw, and Creek Indians, including loss of homeland/place/belonging, family, and sacred spaces.

•**Indian Identity and culture remain:** Removal did not cause the loss of Cherokee, Chickasaw, or Creek identity; the nations have since come full-circle, able to return to this place of departure and feel reconnected and welcome in the sacred spaces of their homelands.

Topics and Viewpoints:
Tuscumbia Landing

The broad topics that are part of the history of Tuscumbia Landing were examined and reduced to fit within the themes (to the left). Input by community members and representatives from the removed tribes who passed through Tuscumbia Landing have provided multiple perspectives on the site and route's significance.

Interpretive Experience Goal

Audiences will become aware of the removal story, its impact on removed tribes, and its place in U.S. history.

The event of Indian removal and the Trail of Tears can be represented through the physical remains at Tuscumbia Landing and along the historic route.

Major Points to Interpret to Facilitate Personal Connections to the Story of Removal

1. There were multiple tribes involved in Indian removal, both in the overall removal story and with those removed through Tuscumbia Landing. ("It happened here.")
2. There are many symbolic aspects to the tribes' removal experience at the site.
3. Today the site is quiet and beautiful, but that was not the landscape in the 1830s, which was bustling with trains, steamboats, people, and goods.
4. Scale of activities related to the business of the depot and removal.

American Indian Worldview and Perspectives on Site or Route Importance

1. We are still here
2. Ancestral home and return
3. Humanity at its best and worst
4. Relationship to the natural world
5. Symbolism of site attributes, such as physical movement and circulation at the site; cardinal directions and alignment; elements such as the meeting of earth and water; life and death – redemption and respect

Interpretive Topics – Tuscumbia Landing

Tuscumbia Landing
- The cost of the railroad
- Shipping goods and people
- Magnificent steamers and palatial appointments (sign of the times) (landscape at the landing)
- Jobs at the landing (infrastructure)
- Power of the railroad (economics, commerce, privileged capitalist system)
- "Attended with much extra labor and expense" (building the depot)
- Depot and warehouse (4 exhibit topics)
- Major Ridge
- Civil War
- Wharf and quarry
- Departure moment
- Full-circle story (leaving and returning)

Interpretive Media Recommendations:
Tuscumbia Landing

Orientation and interpretive exhibits provide the basic information the public needs to experience the site. They are available 24 hours a day and can provide compelling visual content.

Orientation exhibits help visitors understand the site, things to do, and where to go. Interpretive exhibits caption the landscape, offering a direct connection between the visitor and trail resources.

Conceptual rendering of the landing and wayside exhibit

Examples: Exhibit Sketches for Tuscumbia Landing Phase 1

Orientation Exhibits

Upon arrival, visitors will see these exhibits near the parking area at the trailhead.

- Orientation/information
- Orientation of tangible resources
- Orientation with map of retracement trail

Tuscumbia Landing orientation exhibit example

Trail of Tears orientation exhibit example

Interpretive Exhibits (Wayside)

Interpretive exhibits at the overlook and waterfront focus on the infrastructure of Removal.

- Place-based
- Aids visualization
- Shows scale of removal
- Illustrates a scene
- Uses text to explain the resource in view

Tuscumbia Landing wayside exhibit example

Tuscumbia Landing wayside exhibit example

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Login.gov FAQs

ALERT: SAM.gov will be down for scheduled maintenance Saturday, 03/13/2021 from 8:00 AM to 1:00 PM.

Due to internal CAGE maintenance, CAGE will be unavailable on Sunday February 28, 2021 @ 8:30 AM - 12:30 PM (ET).

Due to internal CAGE maintenance, CAGE will be unavailable on Saturday March 13, 2021 @ 7:00 AM - 01:00 PM (ET).

Entity Dashboard

SHEFFIELD, CITY OF
DUNS: 075459230 CAGE Code: 5LCE6
Status: Active
Expiration Date: 01/20/2022
Purpose of Registration: Federal Assistance Awards Only

600 N MONTGOMERY AVE
SHEFFIELD, AL, 35660-2834 ,
UNITED STATES

- Entity Overview
- Entity Registration
  - Core Data
  - Assertions
  - Reps & Certs
  - POCs
- Exclusions
  - Active Exclusions
  - Inactive Exclusions
  - Excluded Family Members

RETURN TO SEARCH

Entity Overview

Entity Registration Summary

Name: SHEFFIELD, CITY OF
Business Type: US Local Government
Last Updated By: Karen Mathis
Registration Status: Active
Activation Date: 01/22/2021
Expiration Date: 01/20/2022

Exclusion Summary

Active Exclusion Records? No

GSA

IBM-P-20210209-1148
WWW7

Search Records | Disclaimers | FAPIIS.gov
Data Access | Accessibility | GSA.gov/IAE
Check Status | Privacy Policy | GSA.gov
About | | USA.gov
Help

February 15th, 2021

Lisa Jones
Executive Director/State Historic Preservation Officer
Alabama Historic Commission
468 South Perry Street
Montgomery, AL 36103-0900

City of Sheffield (Colbert County)
ADECA-RTP

Dear Mrs. Jones:

The City of Sheffield is seeking ADECA Recreational Trails Program funding to construct a walking trail at the Tuscumbia Landing National Historic Site. The proposed project map is attached. All construction will be on previously disturbed property on an existing foot trail which has already undergone and passed a previous environmental review. The proposed project is located a lat/lon of **34° 44' 55.3056"N/87° 43' 34.464"W**.

During construction, "Best Management Practices" will be used to prevent siltation and sedimentation. As required by ADECA, we are requesting that your office review our proposal for preliminary environmental concurrence.

Please note attached map, and photographs. Thank you for your assistance with this project.

Sincerely,

Beau Cooper
Regional Planner
NACOLG

February 15th, 2021

Lisa Jones
Executive Director/State Historic Preservation Officer
Alabama Historic Commission
468 South Perry Street
Montgomery, AL 36103-0900

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Sincerely,

Beau Cooper
Regional Planner
NACOLG

February 15th, 2021

Mr. William J. Pearson
Field Supervisor
U.S. Fish and Wildlife Services
1208 B Main Street
Daphne, AL 36526-4419

City of Sheffield (Colbert County)
ADECA-RTP

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Sincerely,

Beau Cooper
Regional Planner
NACOLG

February 15th, 2021

Mr. Robin Soweka Jr.
Muscogee (Creek) Nation
Cultural Preservation Dept.
P.O. Box 580
Okmulgee, OK 74447

City of Sheffield (Colbert County)
ADECA-RTP

Dear Mr. Soweka:

The City of Sheffield is seeking ADECA Recreational Trails Program funding to construct a walking trail at the Tuscumbia Landing National Historic Site. The proposed project map is attached. All construction will be on previously disturbed property on an existing foot trail which has already undergone and passed a previous environmental review. The proposed project is located a lat/lon of **34° 44' 55.3056"N/87° 43' 34.464"W**.

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Sincerely,

Beau Cooper
Regional Planner
NACOLG

AST Environmental

Protected Species Habitat Assessment

Tuscumbia Landing Project (55 Acres)

Sheffield, Colbert County, Alabama

This assessment was conducted
in general accordance with
the provisions of the
Endangered Species Act of 1973

December 17, 2018

JS18-123

98 Mark Selby Private Drive ~ Decatur, Alabama 35603 ~ (256) 476-7355

PROJECT INFORMATION

AST Environmental (AST) has completed a Protected Species Habitat Assessment for the referenced project. The project boundary was provided to AST in an email received on October 24, 2018. The site is located in Sheffield, Alabama. The assessment area includes 55 acres and is situated east of the Tennessee River / Spring Creek confluence and west of Blackwell Road. See Site Map.

HABITAT ASSESSMENT

AST performed a protected species habitat assessment, in order to determine if suitable habitat is present or absent on site, for listed Colbert County species.

AST obtained information from the USFWS database and other published documents, and performed a field assessment. The following species are listed as Endangered or Threatened by the USFWS for Colbert County:

Common Name	Scientific Name	Status
Spectaclecase (mussel)	*Cumberlandia monodonta*	Endangered
Fanshell	*Cyprogenia stegaria*	Endangered
Dromedary pearlymussel	*Dromus dromas*	Endangered
Cumberlandian combshell	*Epioblasma brevidens*	Endangered
Oyster mussel	*Epioblasma capsaeformis*	Endangered
Snuffbox mussel	*Epioblasma triquetra*	Endangered
Pink mucket (pearlymussel)	*Lampsilis abrupta*	Endangered
Ring pink (mussel)	*Obovaria retusa*	Endangered
White wartyback (pearlymussel)	*Plethobasus cicatricosus*	Endangered
Orangefoot pimpleback (pearlymussel)	*Plethobasus cooperianus*	Endangered
Sheepnose mussel	*Plethobasus cyphyus*	Endangered
Rough pigtoe	*Pleurobema plenum*	Endangered
Slabside pearlymussel	*Pleuronaia dolabelloides*	Endangered
Rabbitsfoot	*Quadrula cylindrica*	Threatened
Cumberland monkeyface (pearlymussel)	*Quadrula intermedia*	Endangered
Snail darter	*Percina tanasi*	Threatened
Alabama cavefish	*Speoplatyrhinus poulsoni*	Endangered
Spotfin chub	*Erimonax monachus*	Threatened
Leafy prairie-clover	*Dalea foliosa*	Endangered
Lyrate bladderpod	*Lesquerella lyrata*	Threatened
White fringeless orchid	*Platanthera integrilabia*	Threatened
Tennessee yellow-eyed grass	*Xyris tennesseensis*	Endangered
Gray bat	*Myotis grisescens*	Endangered
Northern long-eared Bat	*Myotis septentrionalis*	Threatened
Indiana bat	*Myotis sodalis*	Endangered

FIELD ASSESSMENT

Following the literature review, AST performed a field reconnaissance of the project area on December 11 and 12, 2018. Habitats occurring within the study limits were compared with the habitat preferences and requirements of those species Federally Listed for Colbert County in order to determine if suitable habitat for protected species is present or absent on site.

Additionally, site data was collected using methods prescribed in the *April, 2015, Range-Wide Indiana Bat Summer Survey Guidelines* manual in order to complete a series of

Indiana Bat Habitat Assessment Worksheets (IBHAW). The worksheets were used in order to assess the site for potential Indiana Bat and Northern Long-eared Bat summer roosting habitat.

The assessment area includes a 55-acre tract that was once a city park. The site is bordered to the northeast by the Tennessee River and Spring Creek. The majority of the site consists of rolling to steep uplands under a dense to open mixed hardwood canopy. Dominant tree species include: various oak and hickory species, sweetgum, hackberry, magnolia, walnut and Chinese privet. The majority of the site has a dense canopy with dense to open midstory and understory. Portions of the site are dense and choked with Chinese privet (*Ligustrum sinense*t). A small, terraced field is situated in the northeastern portion of the assessment area. Dominant herbaceous vegetation within the field includes: broomsedge, fescue, yellow bristle-grass, bermuda grass and young pine trees. A paved, park road is located throughout the assessment area. Several dilapidated pavilions are situated along the park road, within the site .boundary

One intermittent stream is located on site and totals 2,390 linear feet. This stream is an unnamed tributary to Spring Creek; it drains the southeast before emptying into Spring Creek. This stream is mapped by the United States Geological Survey (USGS) as a blue-line stream. Throughout its reach, the stream becomes subsurface and dry in many locations. Portions of the stream had surface water with little flow. Additionally, portions of the stream had standing water with no flow. Where wet, the stream was generally very shallow (a few inches or less). The majority of the stream has a deeply incised bed with steep, eroding banks. The lower reach of the stream was ponded with backwater from Spring Creek. Spring Creek was at top-of-bank during the assessment due to the amount of rainfall within the week prior to the assessment. See Stream Features Maps, and Site Photographs.

Ephemeral drainage features are common on site. Linear footages, location coordinates, and stream characteristics of each ephemeral drainage feature are presented in Table 1. See Table 1, Stream Features Maps and Site Photographs.

A review of the project vicinity indicates that there are 903 forested acres within a one mile radius of the project area. See Potential Bat Roosting Habitat Map.

SPECIES ASSESSMENT

Federally Listed species for Colbert County were grouped according to primary habitat constraints:

Stream-River Species

Spectaclecase (mussel)
Fanshell
Dromedary pearlymussel
Cumberlandian combshell
Oyster mussel
Snuffbox mussel
Pink mucket (pearlymussel)
Ring pink (mussel)
White wartyback (pearlymussel)
Orangefoot pimpleback (pearlymussel)
Sheepnose mussel
Rough pigtoe
Slabside pearlymussel

Rabbitsfoot
Cumberland monkeyface (pearlymussel)
Snail darter
Spotfin chub

Cave Species

Gray bat
Indiana bat
Northern long-eared bat
Alabama cave Fish

Bog Wetland Species

White fringeless orchid
Tennessee yellow-eyed grass

Limestone Barren Species

Lyrate bladderpod
Leafy prarie-clover

Habitat requirements were evaluated in order to determine if suitable habitat for protected species was present or absent within the site boundary. AST's finding for each species are discussed below.

Stream-River Species

Mussels

The **Spectaclecase Mussel** (*Cumberlandia mondonta*) is a small mussel reaching a maximum length of three inches. It occurs in large rivers typically on outside bends below bluff lines. It occurs in substrates from firm mud and sand to gravel, cobble, and boulders. It is known to inhabit submerged tree stumps and root masses and is also found under slab boulders or bedrock shelves. This species appears to require refugia from swift currents but is most often found near the interface with swift currents. Spectaclecase populations tend to be aggregated, and individuals seldom move except to burrow.

The **Fanshell** (*Cyprogenia stegaria*) is a small mussel reaching a maximum length of three inches. It occurs in medium to large streams typically with gravel substrates. It is found in deep and shallow water with strong currents. Glochidial hosts have been known to include: banded sculpin, mottled sculpin, greenside darter, Tennessee snub-nose darter and banded darter. The Nature Serve database lists the habitat for this species as: BIG RIVER, MEDIUM RIVER.

The **Dromedary Pearlymussel** (*Dromus dromas*) is a medium-sized freshwater mussel reaching a maximum length of 3.3 inches. *D. dromas* has been reported to live up to 25 years. They inhabit riffle areas in moderate current with sand and gravel substrates. They have also been found in deeper, slower moving water. The Nature Serve database lists the habitat for this species as: BIG RIVER, MEDIUM RIVER, Riffle.

The **Cumberlandian Combshell** (*Epioblasma brevidens)* is a small, solid-shelled mussel (approximately 3 inches maximum length). The only known extant population of *Epioblasma brevidens* in Alabama is located in Bear Creek (Colbert County). *Brevidens*, as well as other *Epioblasma* species are considered to be true riffle species, inhabiting pristine rocky streams. It has been collected from substrates ranging from coarse sand to gravel-filled cracks in boulders and bedrock. This species is not typically associated with small streams. The Nature Serve database lists the habitat for this species as: BIG RIVER, MEDIUM RIVER, MODERATE GRADIENT, Riffle.

The **Oyster Mussel** (*Epioblasma capsaeformis*) is a medium-sized mussel attainaing an average size of 2.75 inches. It inhabits riffles with swift current, high water quality, and rocky substrates. *E. capsaeformis* was once common throughout its natural range. Critical habitat was designated for Bear Creek in Alabama and Mississippi. Nature Serve database lists the habitat for this species as: BIG RIVER, CREEK< MEDIUM RIVER, Moderate gradient, Riffle.

The **Snuffbox Mussel** (*Epioblasma triquetra*) has a relatively thick triangular-shaped, shell. This species was historically widespread in the upper Mississippi and Ohio River drainages. It was widespread but never considered to be abundant in the Tennessee River system. Extant populations are currently present in parts of Wisconsin, Illinois, Indiana, Kentucky, Michigan, Ohio, Pennsylvania, Tennessee, and West Virginia. This species typically inhabits riffles of medium and large rivers with rocky to sandy substrates. This species is known to burrow deeply, if inhabiting reaches with swift currents. The Nature Serve database lists the habitat for this species as: BIG RIVER, MEDIUM RIVER, Riffle.

The **Pink Mucket Mussel** *(Lampsilis abrupta*) is a medium sized freshwater mussel that will reach approximately 100 mm in length. The life span of the Pink Mucket may exceed 50 years. The Pink Mucket inhabits medium to large rivers with strong currents and impoundments with more lacustrine conditions. Sand, gravel, and pockets between rocky ledges are preferred substrates in areas with high velocity flows. Mud and sand is the more prevalent substrate type in areas with slower moving waters. The *Nature Serve database* lists the habitat for this species as: BIG RIVER, MEDIUM RIVER, and RIFFLE. The Pink Mucket Pearly Mussel is considered to be a big river species. Its distribution in Alabama is primarily limited to the Tennessee River Proper.

The **Ring Pink** (*Obovaria retussa*) is a medium to large sized freshwater mussel with a round shell. It has a solid shell that darkens with age. This species inhabits large rivers, but has been reported in medium sized rivers including the Duck River in Tennessee. Most historic occurrences of this species have been inundated due to dam impoundments. Nature Serve database lists the habitat for this species as: BIG RIVER, MEDIUM RIVER, Riffle.

The **White Wartyback** (*Plethobasus cicatricosus*) is a freshwater mussel with an elongated, thick shell. Its life history is not known but it is presumed to inhabit shoals and riffles in the Tennessee River and other large rivers. Nature Serve database lists the habitat as BIG RIVER, Riffle.

The **Orangefoot Pimpleback** (*Plethobasus cooperianus*) is a medium-sized mussel with maximum shell lengths reaching approximately 90mm. The shell is solid, heavy and moderately inflated. The orangefoot pimpleback is considered a big river species, found in sand, gravel, and cobble substrates in riffles and shoals of deep waters with steady currents. The Nature Serve database lists the habitat for this species as: BIG RIVER, Riffle.

The **Sheepnose Mussel** (*Plethobasus cyphyus*) has an oval or oblong shell with a smooth surface except for a single row tubercles running from the umbo to the ventral margin. The sheepnose is generally considered to be a large-river species but may occur in medium-sized rivers. It occurs in riffles or runs with swift currents and inhabits firm mud / sand to gravel / cobble substrates. This species is typically reported from deep water runs (>2 m) with slight to swift currents and in reservoirs, immediately below

dams. The Nature Serve database lists the habitat for this species as: BIG RIVER, Low gradient, MEDIUM RIVER, Moderate gradient, Riffle.

The **Rough Pigtoe Mussel** (*Pleurobema plenum*) is a medium sized freshwater mussel reaching 100 mm in length. The Rough Pigtoe historically occurred throughout the Ohio, Cumberland, and Tennessee River drainages. This species has been known to inhabit sand, gravel and cobble shoals of medium to large rivers. The Rough Pigtoe has also been collected from mud and sand flats. Extant populations of this species currently inhabit tailwaters below three impoundments on the mainstem of the Tennessee River (Pickwick, Wilson, and Guntersville). The *Nature Serve database* lists the habitat for this species as: BIG RIVER, MEDIUM RIVER. Its distribution in Alabama is primarily limited to the Tennessee River Proper.

The **Slabside Pearly Mussel** (*Pleuronaia dolabelloides*) is a moderately-sized freshwater mussel that can reach about 90 mm in length. It is primarily a large creek to medium-sized river species. It inhabits sand, fine gravel, and cobble substrates in relatively shallow riffles and shoals with moderate current. This species requires flowing, well-oxygenated waters to thrive.

The **Rabbitsfoot Mussel** (*Quadrula cylindrica cylindrica*) has a conspicuously rectangular shaped shell with pustules and chevron markings. Historically, the rabbitsfoot has been reported from 15 states ranging throughout the Ohio, Cumberland, Tennessee, lower Mississippi, White, Arkansas and Red River systems. Typical habitat for this species is small to medium rivers with moderate to swift currents. In smaller streams it inhabits gravel and cobble laden reaches near swift currents. The Nature Serve database lists the habitat for this species as: BIG RIVER, CREEK, MEDIUM RIVER, Moderate gradient, Riffle.

The **Cumberland monkeyface** (*Quadrula intermedia*) is a medium sized freshwater mussel with a greenish-yellowish shell. Host fish include the streamline chub and the blotched chub. Nature Serve database lists the habitat as: BIG RIVER, High gradient, MEDIUM RIVER, Moderate gradient, Riffle. This species is known to inhabit shallow riffle areas of headwater streams and larger rivers among sand and gravel substrates. An experimental population is known to exist below Wilson Dam to the backwaters of Pickwick Reservoir in the Tennessee River in Alabama.

Mussel Results

Perennial stream habitat is not present on site; although the Tennessee River and Spring Creek border the site to the northeast. Potentially suitable habitat for listed mussels is not present within the site boundary (see Site Maps and Photographs).

Fish

The **Snail Darter** (*Percina tanasi*) is a fish reaching lengths that rarely exceed 85 mm and has a lifespan of one to three years. While feeding primarily on aquatic gastropods, the Snail Darter will also feed on clams and insects. The Snail Darter primarily inhabits two types of habitat, relatively shallow gravel shoal areas with swift current and deep slackwater pools in large streams and rivers. Spawning occurs in early February through April. Spawning occurs over the shallowest part of gravel shoals that consist of smooth gravel and impacted sand.

The Snail Darter's historical range may have included the middle portion of the Tennessee River main stem from northeastern Alabama, and possibly lower reaches of

major tributaries. Currently, the Snail Darter is relatively abundant in the lower French Broad, Holston, and Little Rivers near Knoxville, Tennessee. It is also known to inhabit other Tennessee waters including: the Hiwassee River, Sewee Creek, South Chickamauga Creek and the Sequatchie River. The Snail Darter is known from the Paint Rock River in Madison County, Alabama, but not from the project vicinity.

The **Spotfin Chub** (*Erimonax monachus*) is a short-lived, small cyprinid reaching 9cm in length. This species was once considered to be widespread within the upper and middle Tennessee River systems. Known populations are currently limited to upper and eastern Tennessee, Virginia and North Carolina. This species typically inhabits clear, large creeks or medium-sized rivers of moderate gradient. It is generally found in or near moderate and swift currents over gravel to bedrock, but rarely over sand or silt. The Nature Serve database lists the habitat for this species as: CREEK, MEDIUM RIVER, Moderate gradient.

Fish Results

Perennial stream habitat is not present within the assessment area; however, the Tennessee River and Spring Creek border the site to the northeast. Potentially suitable habitat for listed fishes is not present on site (see Site Maps and Photographs).

Cave Species

Bats

The **Gray Bat** (*Myotis grisescens*) is found in northern Alabama. It is a year-round cave resident, normally inhabiting caves located within one mile of a major river or reservoir. Grey bats roost in warm caves, during summer, scattered along rivers to establish colonies. During winter, they relocate and hibernate deep within caves. Gray Bats forage over water bodies for mayflies and other flying insects.

No bluffs, caves or cave-like structures were observed on site. Potentially suitable hybernacula for Gray Bat is not present within the study limits. The Tennessee River and Spring Creek border the project area to the northeast. Potentially suitable forage habitat is not present on site, but is potentially present adjacent to the site, over the Tennessee River and Spring Creek. One unnamed intermittent tributary to Spring Creek is present on site, but but is too small to provide suitable forage habitat for the Grey Bat.

The **Indiana Bat** (*Myotis sodalis*) is found in northern Alabama. It is closely associated with caves, although the Indiana Bat is suspected to dwell within floodplain and upland forests during the warmer months. Indiana Bats have been known to roost in trees smaller than 10 inches diameter at breast height (dbh). Indiana Bats usually breed in early October and yield a single young in June or July. Breeding typically takes place at night and occurs in large subterranean rooms near cave entrances. According to Harvey, et al., 85 percent of Indiana Bats hibernate in nine caves located in the eastern U.S.

No bluffs, caves or cave-like structures were observed within the project boundary. Due to the lack of caves within the study limits, hibernacula and potential breeding habitat for the Indiana Bat is not present on site.

The *April, 2015, Range-Wide Indiana Bat Summer Survey Guideline* Manual describes suitable summer habitat for Indiana Bats as a wide variety of forested/wooded habitats where bats roost, forage, and travel. Habitat includes some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural

fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. Preferred tree species include: Shagbark Hickory, Cottonwood, White Oak, Maple, American Elm, Shortleaf Pine and other Oak species.

AST performed a field reconnaissance of the project area. Site data was collected using methods prescribed in the *April, 2015, Range-Wide Indiana Bat Summer Survey Guidelines* manual in order to complete a series of Indiana Bat Habitat Assessment Worksheet (IBHAW). The worksheets were used to assess the site for potential Indiana Bat and Northern Long-eared Bat summer roosting habitat.

The majority of the 55 acre site consists of a mature, mixed hardwood forest with a full canopy and open to dense midstories and understories. Two Indiana Bat Habitat Assessment worksheets were completed on-site to document tree species, water resources, and habitat features within the project boundary (see Bat Habitat Assessment Location Map and Indiana Bat Habitat Assessment Forms B-1 and B-2. Preferred, live, suitable roosting tree species were present at each Bat Habitat Assessment Area and throughout the project area. Preferred dominant tree species observed during the assessment include: White Oak (*Quercus alba*), Post Oak (*Quercus stellata*), Water Oak (*Quercus nigra*) and Ash-leaf Maple (*Acer negundo*). A review of the project vicinity indicates that there are 903 forested acres within a one mile radius of the survey corridor (see Potential Bat Roosting Habitat Map).

Snag trees (standing dead trees with exfoliating bark, cracks, crevices, and/or hollows) were observed throughout the project area. Suitable summer roosting habitat and forage habitat is potentially present among preferred, live, trees and suitable snag trees throughout the project area (see Bat Habitat Assessment Map and Indiana Bat Habitat Assessment Worksheets B-1 and B-2).

Based upon the presence of preferred live trees and suitable roosting trees within the study limits, the Indiana Bat could potentially be present within the project area during the summer months (see Site Maps and Photographs).

The **Northern Long-eared Bat** (*Myotis septentrionalis*) is found in northern Alabama. It is closely associated with caves, but also dwells within upland forests and forested ridges during warmer months. Northern Long-eared Bats have been known to roost in trees with holes, crevices and sloughing bark and also in caves and mines. Northern Long-eared Bats usually breed in late summer or early fall and yield a single young in late spring to early summer (Mirarchi, R.E., 2004).

No bluffs, caves or cave-like structures were observed within the project boundary. Due to the lack of caves within the study limits, hibernacula and potential breeding habitat for the Northern Long-eared Bat is not present on site.

The *April, 2015, Range-Wide Indiana Bat Summer Survey Guideline* Manual describes suitable summer habitat for Northern Long-eared Bats as a wide variety of forested/wooded habitats where bats roost, forage, and travel. Habitat includes some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such

as fencerows, riparian forests, and other wooded corridors. Preferred tree species include: Shagbark Hickory, Cottonwood, White Oak, Maple, American Elm, Shortleaf Pine and other Oak species. A review of the project vicinity indicates that there are 903 forested acres within a 1 mile radius of the survey corridor (see Potential Bat Roosting Habitat Map).

AST performed a field reconnaissance of the project area. Site data was collected using methods prescribed in the *April, 2015, Range-Wide Indiana Bat Summer Survey Guidelines* manual in order to complete a series of Indiana Bat Habitat Assessment Worksheet (IBHAW). The worksheets were used to assess the site for potential Indiana Bat and Northern Long-eared Bat summer roosting habitat.

The majority of the 55 acre site consists of a mature, mixed hardwood forest with a full canopy and open to dense midstories and understories. Two Indiana Bat Habitat Assessment worksheets were completed on-site to document tree species, water resources, and habitat features within the project boundary (see Bat Habitat Assessment Location Map and Indiana Bat Habitat Assessment Forms B-1 and B-2. Preferred, live, suitable roosting tree species were present at each Bat Habitat Assessment Area and throughout the project area. Preferred dominant tree species observed during the assessment include: White Oak (*Quercus alba*), Post Oak (*Quercus stellata*), Water Oak (*Quercus nigra*) and Ash-leaf Maple (*Acer negundo*). A review of the project vicinity indicates that there are 903 forested acres within a 1 mile radius of the survey corridor (see Potential Bat Roosting Habitat Map).

Snag trees (standing dead trees with exfoliating bark, cracks, crevices, and/or hollows) were observed throughout the project area. Suitable summer roosting habitat and forage habitat is potentially present among preferred, live, trees and suitable snag trees throughout the project area (see Bat Habitat Assessment Map and Indiana Bat Habitat Assessment Worksheets B-1 and B-2).

Based upon the presence of preferred live trees and suitable roosting trees within the study limits, the Northern Long-eared Bat could potentially be present within the project area during the summer months (see Site Maps and Photographs).

Fish

The **Alabama Cave Fish** (*Speoplatyrhinus poulsoni*) is a small fish (6 cm) that is restricted to nearby Key Cave in Lauderdale County, Alabama. It is pinkish-white, has no eyes, and feeds on small aquatic invertebrates.

No bluffs, caves or cave-like structures were observed within the project area. Potentially suitable habitat for the Alabama Cave Fish is not present on site (see Site Maps and Photographs).

Bog Wetland Species

The **White Fringeless Orchid**, *Platanthera integrelabia*, is a perennial herb reaching 2 feet (60 cm) tall. The inflorescence is a terminal spike with up to 20 white, long spurred fragrant flowers. Typically, 6 to 15 white flowers grow in a round to elongate cluster at the top of a single stem, blooming from July to early September. The flower petals are oblong (7mm by 2.5 mm) with wavy but smooth edges. Fruit is ellipsoid (15 mm by 3 mm). *Platanthera integrelabia* is typically found in partially, but not fully, shaded bogs at

stream heads and seepage slopes associated with *Sphagnum* spp., *Osmunda cinnamonea, Woodwardia areolate,* and *Thelptyris novaboracensis*. This species is found in sandstones on the Appalachian Plateaus of Kentucky, Tennessee, and Alabama, the Coast Plain of Alabama and Mississippi, and the Ridge and Valley Province in Alabama.

Boggy areas and seepage slopes were not observed on site. Based upon lack of habitat, the White Fringeless Orchid is not expected to be present on site (see Site Maps and Photographs).

Tennessee Yellow-Eyed Grass, *Xyris tennesseensis*, is a perennial herb arising from a bulbous base, reaching 11 – 28 in. (28 – 71 cm) in height. The lower leaves are 1-4.5 dm long and mostly erect and linear. The inflorescence consists of a single cone-like spike (0.4 - 0.6 in.) with small, pale yellow flowers (0.2 in. in length). Blooms occur during August and September. This species can occur solitary or in small dense tufts. Flowers open in the morning and close by mid-afternoon. *Xyris tennesseensis* is a wetland obligate plant. It is only found in open or thin canopy woods among gravelly seep-slopes with year-round seepage or mineral rich water flow; and spring runs. This plant is known to occur only in Bibb, Calhoun, Franklin and Shelby counties in Alabama.

This species is not known from Colbert County. Limestone seep-slopes, springs, and spring runs were not observed on site. Based upon the lack of habitat, Tennessee Yellow-Eyed Grass is not expected to be present within the study limits (see Site Maps and Photographs).

Limestone Barren Species

Lyrate Bladderpod (*Lesquerella lyrata*) occurs only in in Alabama in Colbert and Lawrence Counties. This species requires open, thin soils on or near cedar glades and limestone barren habitats.

Limestone glades, barrens, and cedar glades are not present on site. Based upon lack of habitat, Lyrate Bladderpod is not expected to be present on site (see Site Maps and Photographs).

Leafy prairie clover (*Dalea foliosa*) occurs in Tennessee and Alabama in open, thin-soiled limestone glades and limestone barrens. In Tennessee, the plants occur on wet calcareous barrens and moist prairies or cedar glades, usually near a stream or where some seepage from limestone provides seasonal moisture. Associates in these habitats are rose-pink (*Sabatia angularis*), and black-eyed Susan (*Rudbeckia triloba*). The species is disjunct in Illinois, where it is restricted to thin-soiled (< 4.5 dm), wet or moist, open dolomite prairies on river terraces in the northeastern part of the state. The plants require full sun and low competition for optimum growth and reproduction; periodic fire is needed to maintain these conditions.

Limestone glades, barrens, and cedar glades are not present on site. Based upon lack of habitat, Leafy prairie clover is not expected to be present on site (see Site Maps and Photographs).

CONCLUSIONS

Of the 25 protected species addressed in this habitat assessment:

- No individuals or populations were incidentally observed during the protected species habitat assessment.
- Suitable habitat for listed mussel, snail, and fish species is not present within the project boundary.
- Suitable habitat for listed herbaceous species is not present within the project boundary.
- Potentially suitable hibernacula for listed Bat species is not present within the project boundary.
- Potentially suitable Indiana Bat and Northern Long-eared Bat summer roosting habitat and forage habitat is likely present within the project boundary.

Written concurrence with the findings of this report should be obtained from the USFWS prior to implementation of the proposed project.

AST Environmental

Michael McConnell
Environmental Scientist

Jeff Selby, M.S.
Senior Biologist

Selected References:

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Thorp and Covich. 1991. Ecology and Classification of North American Freshwater Invertebrates. Academic Press, Inc. San Diego, CA.

NatureServe Online Encyclopedia of Life
http://www.natureserve.org/explorer/

TABLES

Table 1. Stream or drainage features located on the 55 acre site. Inspiration Landing project. Sheffield, Colbert County, AL. December 11-12, 2018.

Drainage Feature	Linear Feet	Latitude	Longitude	USGS Blue-Line Mapped	Wet During Assessment
S-1	2,390	34.74753	-87.72009	Yes	Partially
F-1	170	34.74717	-87.71858	No	No
F-2a	130	34.74788	-87.71721	No	No
F-2b	230	34.74787	-87.71656	No	No
F-3	230	34.74933	-87.71579	No	Partially
F-4	410	34.75003	-87.71711	No	No
F-5	330	34.74953	-87.72271	No	No
F-6a	1,000	34.75006	-87.72136	No	No
F-6b	315	34.74944	-87.72043	No	No
F-7a	770	34.74895	-87.71902	No	No
F-7b	130	34.74857	-87.71848	No	No

INDIANA BAT and NORTHERN LONG-EATED BAT HABITAT ASSESSMENT DATA SHEETS

INDIANA BAT HABITAT ASSESSMENT WORKSHEET

Project Name: JS18-123 Date: 12-12-2018

Township/Range/Section:

Latitude/Longitude: 34.74942 / -87.72517 Surveyor: MJM

Project Description
55 acre site - proposed Inspiration Landing development. Site located east of the Spring Creek / Tennessee River confluence and west of Blackwell Road. Sheffield, Colbert County, Alabama.

Project Area	Total Acres	Forest Acres		Open Acres	
		% of site	% w/in 1 mile	% of site	% w/in 1 mile
55 acres	55 acres	Appx. 98% or 54 acres	Appx. 45% or 903 acres	Appx. 2% or 1 acre	Appx. 55% or 1,107 acres

Tree Removal (ac)	Completely cleared	Partially cleared (with leave trees)	Reserve acres- no clearing
	unknown	unknown	unknown

Landscape within 3 mile radius
Corridors to other Forested Areas? There are 2,010 total acres within a 1 mile radius of the study limits. There are 903 forested acres, 45% of the 2,010 acres within a 1 mile radius of the study limits. There are 1,107 open acres, 55% of the 2,010 acres within a 1 mile radius of the study limits.
Describe Adjacent Property (e.g. forested, grassland, commercial or residential development, water sources) The project area is situated adjacent to Pickwick Lake of the Tennessee River and Spring Creek. The majority of the project area consists of a mature forest with a open to dense canopy, midstory and understory. Approximately 1,107 open acres within a 1 mile radius includes commercial, residential development. Other open areas include the Tennessee River, Spring Creek and maintained landscapes.

Proximity to Public Land
What is the distance (mi.) from the project area to public lands (i.e., national or state forests, national or state parks, conservation areas)? Seven Mile Island Wildlife Management (4,685 aces) is situated approximately 2,100 feet northeast of the project area. Key Cave National Wildlife Refuge (1,030 acres) is situated approximately 3.2 miles east of the project area.

Sample Site Description

Sample Site No. B-1 Tract(s)

Water Resources at Sample Site						
Stream Type and Length (Number and Length)	Ephemeral		Intermittent		Perennial	
	No. 0	N/A	No. 0	N/A	No. 0	N/A
Pools/Ponds (Number and Size)	No. 0		Open and accessible to bats? (Y/N)			
			N/A			
Wetlands (Approx. acreage)	Permanent		Seasonal			
	No. 0	N/A	No. 0	N/A		

Describe existing condition of water resources:

Ephemeral, Intermittent, and Perennial Streams are within or adjacent to the project area.

Pools or Ponds were not observed within the project boundary.

Wetlands were not observed within the project boundary.

The main stem of the Tennessee River is situated adjacent to the project boundary.

Spring Creek is situated adjacent to the project boundary.

Forest Resources at Sample Site			
1=1-10% 2=11-20% 3=21-40% 4=41-60% 5=61-80% 6=81-100% (Closure and Density Ranges)			
Closure and Density	Canopy	Midstory	Understory
	70% = 5	10% = 1	20% = 2
Dominant Species of Mature Tree Species (In stand): hackberry (Celtis occidentalis), walnut (Juglans nigra), Chinese privet (Ligustrum sinense) northern red oak (Quercus rubra), white oak (Quercus nigra), bitternut hickory (Carya cordiformis)			
% Preferred Tree Species >9" in DBH	Quercus nigra 20% Quercus rubra 50%		
% Trees with ≥ 30% exfoliating bark	20%	10%	5%
Size Composition of Live Trees (%)	Small (4-8")	Medium (9-15")	Large (>15")
	30%	30%	40%
Number of Suitable Snags	No. 8	Standing dead trees with sloughing bark ≥30%, crevices, or holes. Snags without these characteristics are not considered suitable.	

IS THE HABITAT SUITABLE FOR INDIANA BATS?			
IF SUITABLE:	(HIGH)	MODERATE	LOW

Additional Stand Comments:

Suitable snag trees were observed at B-1 data point location.

Preferred tree species identified during the assessment include: white oak and northern red oa

Live preferred tree species were present at B-1 data point location.

Suitable roosting habitat is potentially likely.

Preferred Tree Species
Shagbark Hickory
Cottonwood
White Oak
Maple
American Elm
Shortleaf Pine
Other Oak Species

INDIANA BAT HABITAT ASSESSMENT WORKSHEET

Project Name: JS18-123 Date: 12-12-2018

Township/Range/Section:

Latitude/Longitude: 34.74855 / -87.72004 Surveyor: MJM

Project Description
55 acre site - proposed Inspiration Landing development. Site located east of the Spring Creek / Tennessee River confluence and west of Blackwell Road. Sheffield, Colbert County, Alabama.

Project Area	Total Acres	Forest Acres		Open Acres	
		% of site	% w/in 1 mile	% of site	% w/in 1 mile
55 acres	55 acres	Appx. 98% or 54 acres	Appx. 45% or 903 acres	Appx. 2% or 1 acre	Appx. 55% or 1,107 acres

Tree Removal (ac)	Completely cleared	Partially cleared (with leave trees)	Reserve acres- no clearing
	unknown	unknown	unknown

Landscape within 3 mile radius
Corridors to other Forested Areas? There are 2,010 total acres within a 1 mile radius of the study limits. There are 903 forested acres, 45% of the 2,010 acres within a 1 mile radius of the study limits. There are 1,107 open acres, 55% of the 2,010 acres within a 1 mile radius of the study limits.
Describe Adjacent Property (e.g. forested, grassland, commercial or residential development, water sources) The project area is situated adjacent to Pickwick Lake of the Tennessee River and Spring Creek. The majority of the project area consists of a mature forest with a open to dense canopy, midstory and understory. Approximately 1,107 open acres within a 1 mile radius includes commercial, residential development. Other open areas include the Tennessee River, Spring Creek and maintained landscapes.

Proximity to Public Land
What is the distance (mi.) from the project area to public lands (i.e., national or state forests, national or state parks, conservation areas)? Seven Mile Island Wildlife Management (4,685 aces) is situated approximately 2,100 feet northeast of the project area. Key Cave National Wildlife Refuge (1,030 acres) is situated approximately 3.2 miles east of the project area.

Sample Site Description

Sample Site No. B-2 Tract(s)

Water Resources at Sample Site						
Stream Type and Length (Number and Length)	Ephemeral		Intermittent		Perennial	
	No. 0	N/A	No. 0	N/A	No. 0	N/A
Pools/Ponds (Number and Size)	No. 0		Open and accessible to bats? (Y/N)			
			N/A			
Wetlands (Approx. acreage)	Permanent		Seasonal			
	No. 0	N/A	No. 0	N/A		

Describe existing condition of water resources:

Ephemeral, Intermittent, and Perennial Streams are within or adjacent to the project area.

Pools or Ponds were not observed within the project boundary.

Wetlands were not observed within the project boundary.

The main stem of the Tennessee River is situated adjacent to the project boundary.

Spring Creek is situated adjacent to the project boundary.

Forest Resources at Sample Site			
1=1-10% 2=11-20% 3=21-40% 4=41-60% 5=61-80% 6=81-100% (Closure and Density Ranges)			
Closure and Density	Canopy	Midstory	Understory
	65% = 5	10% = 1	25% = 2
Dominant Species of Mature Tree Species (In stand): hackberry (Celtis occidentalis), shagbark hickory (Carya ovata), Chinese privet (Ligustrum sinense) northern red oak (Quercus rubra), white oak (Quercus nigra), bitternut hickory (Carya cordiformis)			
% Preferred Tree Species >9" in DBH	Quercus nigra 20% Quercus rubra 50% Carya ovata 10%		
% Trees with ≥ 30% exfoliating bark	20%	10%	5%
Size Composition of Live Trees (%)	Small (4-8")	Medium (9-15")	Large (>15")
	30%	30%	40%
Number of Suitable Snags	No. 1	Standing dead trees with sloughing bark ≥30%, crevices, or holes. Snags without these characteristics are not considered suitable.	

IS THE HABITAT SUITABLE FOR INDIANA BATS?

IF SUITABLE: HIGH (MODERATE) LOW

Additional Stand Comments:

Suitable snag trees were observed at B-2 data point location.

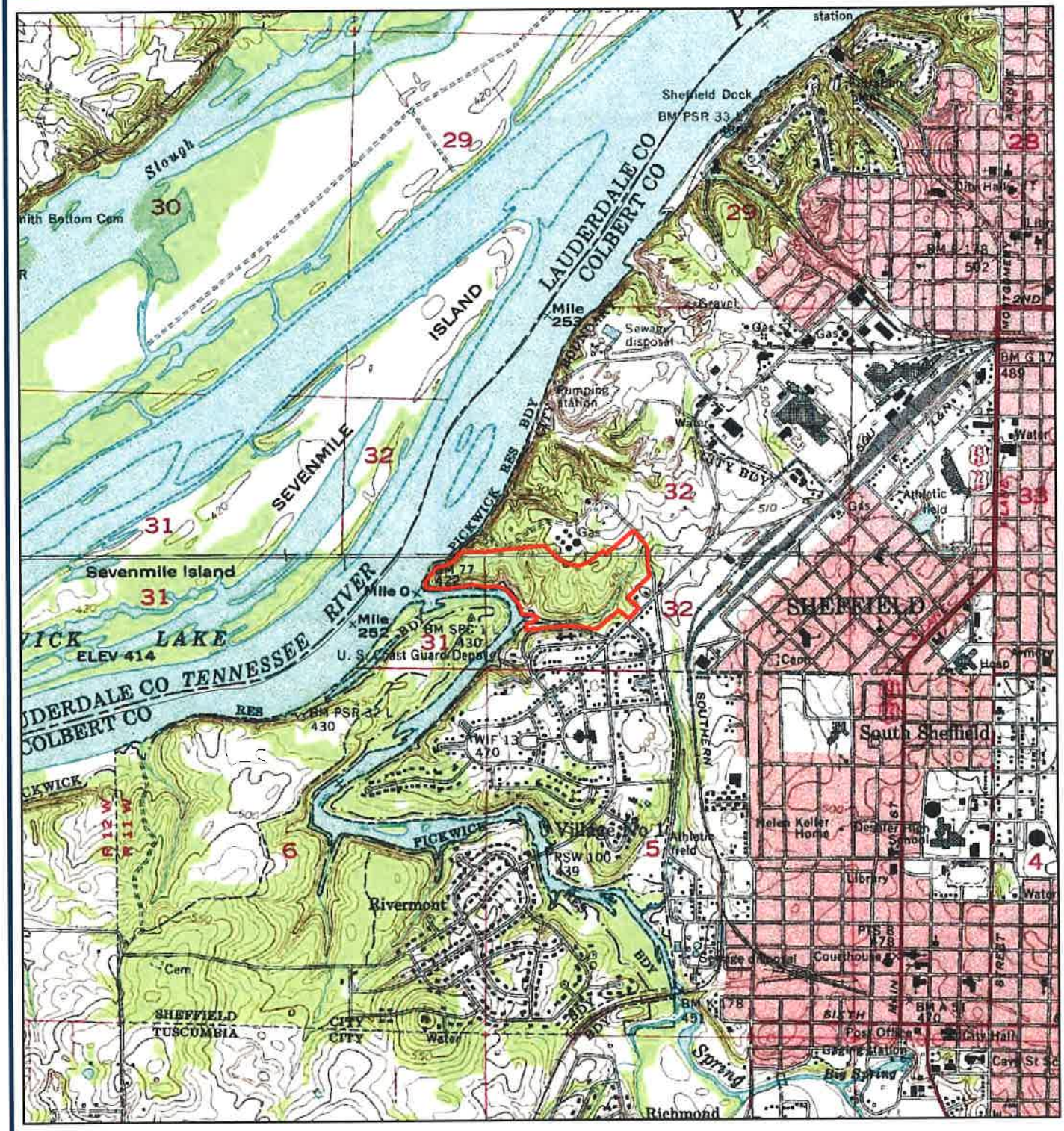
Preferred tree species identified during the assessment include: white oak, northern red oak an

Live preferred tree species were present at B-2 data point location.

Suitable roosting habitat is potentially likely.

Preferred Tree Species
Shagbark Hickory
Cottonwood
White Oak
Maple
American Elm
Shortleaf Pine
Other Oak Species

MAPS



SCALE = 1 : 24,000

Site Boundary - 55 acres

N

SITE MAP
JS18-123
Sheffield, AL

AST Environmental

SOURCE: USDA - NRCS DRG and
2015 NAIPM: Colbert County, Alabama

0 500 1,000 Feet

SCALE = 1 : 6,000

Intermittent Stream

Ephemeral Drainage Feature

N

STREAM FEATURES MAP 1
JS18-123
Sheffield, AL

AST Environmental

SOURCE: USDA - NRCS DRG and
2015 NAIPM: Colbert County, Alabama

0 500 1,000 Feet

SCALE = 1 : 6,000

Intermittent Stream

Ephemeral Drainage Feature

N

STREAM FEATURES MAP 2
JS18-123
Sheffield, AL

AST Environmental

SOURCE: USDA - NRCS DRG and
2015 NAIPM: Colbert County, Alabama

0 500 1,000 Feet

SCALE = 1 : 6,000

Intermittent Stream

Ephemeral Drainage Feature

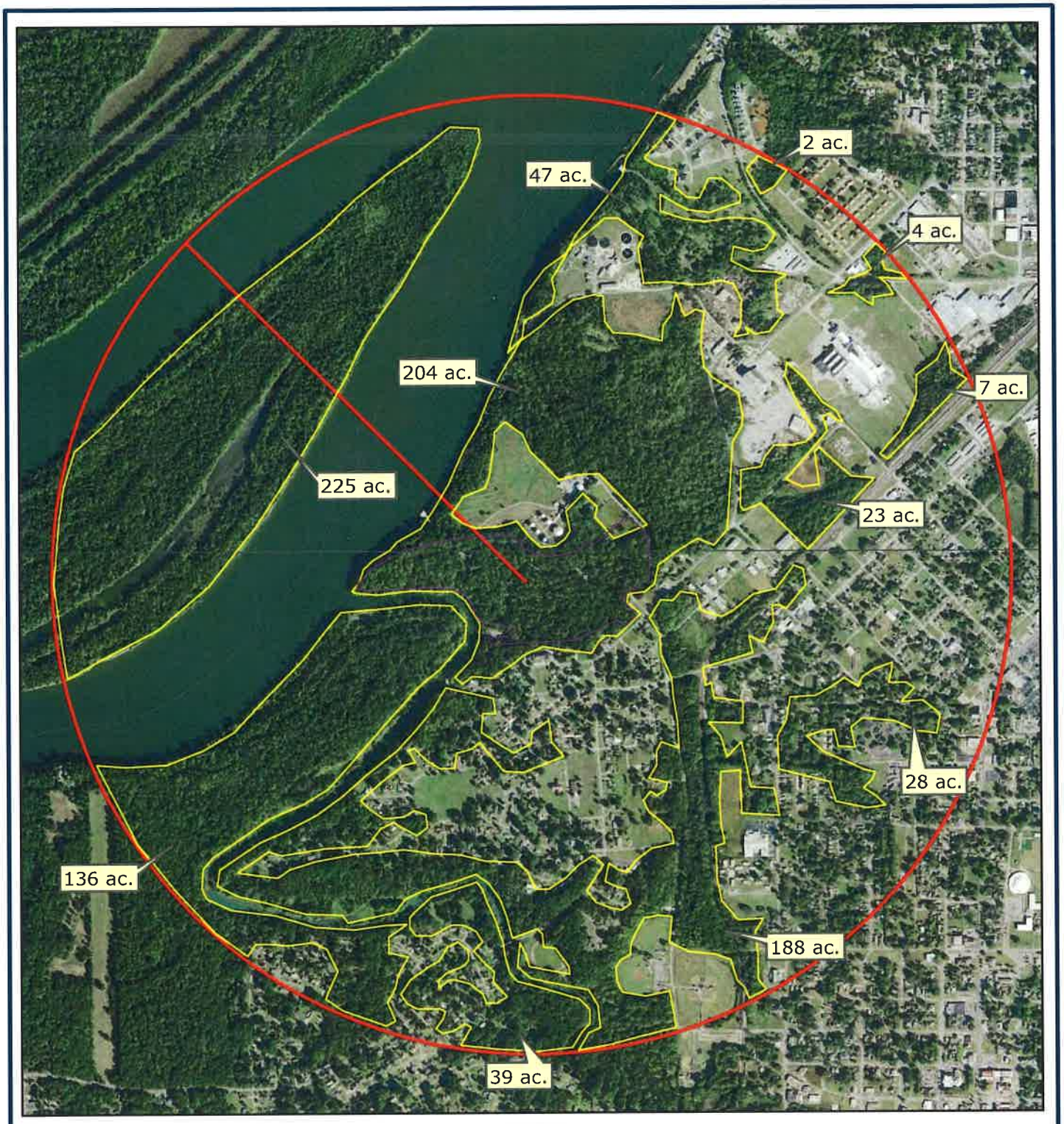
X Photograph Location

N

SOURCE: USDA - NRCS DRG and
2015 NAIPM: Colbert County, Alabama

PHOTOGRAPH LOCATION MAP
JS18-123
Sheffield, AL

AST Environmental



0 0.5 1 Miles

N

SCALE = 1 : 18,000

Site Boundary

Potential Indiana Bat and Northern Long-eared Bat Roosting Habitat - 903 acres in a 1 mile radius

1 Mile Radius

SOURCE: USDA - NRCS DRG and 2015 NAIPM; Colbert County, Alabama

POTENTIAL BAT ROOSTING HABITAT MAP JS18-123
Sheffield - Colbert County, AL

AST Environmental

PHOTOGRAPHS

PHOTOGRAPH 1

Unnamed intermittent tributary to Spring Creek. Facing downstream / west near the western assessment boundary. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 2

Unnamed intermittent tributary to Spring Creek. Facing upslope / east near the western assessment boundary. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 3

Unnamed intermittent tributary to Spring Creek. Facing upslope / east from a location near the central portion of the project boundary. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 4

Unnamed intermittent tributary to Spring Creek. Facing downslope / southwest near the western project boundary. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 5

Ephemeral drainage feature F-1 and Fontana Street culvert. Facing upslope / south near its origin. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 6

Ephemeral drainage feature F-2a (right branch) at its connection with the unnamed intermittent tributary to Spring Creek (left branch). Facing upslope / southeast. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 7

Ephemeral drainage feature F-2b (right branch) at its connection with Ephemeral drainage feature F-2a (left branch). Facing downslope / west. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 8

Ephemeral drainage feature F-3 and Blackwell Road culvert. Facing upslope / southeast. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 9

Ephemeral drainage feature F-4 near its connection with the unnamed intermittent tributary to Spring Creek. Facing downslope / south. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 10

Ephemeral drainage feature F-5 near its connection with Spring Creek. Facing downslope / south. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 11

Ephemeral drainage feature F-6a and city park road culvert. Facing upslope / north near its origin. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 12

Ephemeral drainage feature F-6b. Facing upslope / northeast from near its connection with Ephemeral drainage feature F-6a. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 13

Ephemeral drainage feature F-7a and city park road culvert. Facing downslope / south near its origin. Taken by Mike McConnell, 12-12-18.

PHOTOGRAPH 14

Ephemeral drainage feature F-7b. Facing downslope / southwest near its origin. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 15

Bat Habitat Data Point B-1 location. Facing east near the western portion of the assessment area. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 16

Bat Habitat Data Point B-2 location. Facing south near the central portion of the assessment area. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 17

Open area situated in the northwestern portion of the assessment area. Facing west near the eastern project boundary. Taken by Mike McConnell, 12-12-18.

PHOTOGRAPH 18

Paved park road through a forested upland with a dense privet understory. Facing west near the eastern assessment area boundary. Taken by Mike McConnell, 12-12-18.

PHOTOGRAPH 19

Paved park road through a forested upland with a dense privet understory. Facing west near the northern central portion of the assessment area. Taken by Mike McConnell, 12-12-18.

PHOTOGRAPH 20

Spring Creek. Facing north from a location near the southwestern project boundary. Taken by Mike McConnell, 12-12-18.

AST Environmental

December 13, 2018 JS18-123

TO: City of Sheffield

ATTENTION: Steve Stanley

RE: Environmental Consulting Services for
Tuscumbia Landing Project (approximately 55 acre site)
Wetlands and Streams Assessment
Sheffield, Alabama / Colbert County

Mr. Stanley:

AST Environmental (AST) has completed a wetlands and streams assessment for the referenced project. The project boundary was provided to AST in an email received on October 24, 2018. The site is located in Sheffield, Alabama. The assessment area includes 55 acres and is situated east of the Tennessee River / Spring Creek confluence and west of Blackwell Road. See Site Map.

Site
The majority of the site consists of rolling to steep uplands under a mixed hardwood canopy. Dominant tree species include: various species of oak and hickory, sweetgum, hackberry, magnolia, walnut and Chinese privet. The majority of the site has a fairly open canopy and midstory. Portions of the site are dense and choked with Chinese privet *(Ligustrum sinense)*. A small, terraced field is situated in the northeastern portion of the assessment area. Dominant herbaceous vegetation within the field includes: broomsedge, fescue, yellow bristle-grass, bermuda grass and young pine trees.

Wetlands
AST's wetland assessment consisted of in-house review of the *U.S. Army Corps of Engineers, 2014 National Wetland Plant List, U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey of Colbert County, Alabama,* review of available topographic and aerial photographs, and a field reconnaissance.

Following the information review, AST performed field assessments to identify and delineate wetlands using the "Routine On-Site Determination Method" as defined in the *1987 USACE Wetlands Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)*. This technique uses a multi-parameter approach for defining wetlands, which requires positive evidence of three criteria including: a prevalence of hydrophytic vegetation, presence of hydric soils and presence of wetland hydrology.

Wetlands were not observed or delineated within the assessment area. Four areas appearing to have wetland characteristic were observed on site. Although these areas appeared characteristic of wetlands, they did not meet wetland criteria and were documented as Upland Data Points U-1, U-2, U-3 and U-4. See Upland Data Sheets (U-1 though U-4), Data Point Location Map, and Photographs (24-27).

Hydric soils are not mapped on site by the USDA – NRCS. The soils mapped on site include: Decatur-Urban land complex (2-8 percent slopes, well drained), Fullerton gravelly silt loam (2-15 percent slopes, well drained) and Fullerton-Bodine complex (15-45 percent slopes, well drained). An NRCS Soils Information packet is attached for your review.

Streams
AST performed field assessments using the "*North Carolina Division of Water Quality Methodology for Identification of Intermittent and Perennial Streams and Their Origins*" to evaluate and score on-site streams as ephemeral, intermittent or perennial. A handheld global positioning unit (GPS) was used to delineate on-site streams and features. Features were documented and flagged with plastic survey tape.

One stream (Stream S-1) is located on site. S-1 (2,390 linear feet on site) is an unnamed intermittent tributary to Spring Creek. It drains to the southwest and empties into Spring Creek. S-1 is mapped by the United States Geological Survey (USGS) as a blue-line stream. Throughout its reach, S-1 became subsurface and dry in many locations. On site, portions of S-1 had surface water with little flow. Additionally, portions of S-1 had standing water with no flow. S-1, where wet, was generally very shallow (a few inches or less). The majority of S-1 has a deeply incised bed with steep, eroding banks. The lower reach of S-1 was ponded with backwater from Spring Creek. Spring Creek was at top-of-bank during the assessment due to the amount of rainfall within the week prior to the assessment. See Stream Identification Form S-1, Stream Features Maps, and Photographs 1-4.

Ten ephemeral drainage features are present on site. Linear footages, location coordinates, and stream characteristics of each ephemeral drainage feature are presented in Table 1. See Table 1, Stream Features Maps and Photographs 5-23.

Table 1, a series of Maps, Upland Data Sheets (U-1 through U-4), Stream Identification Sheet S-1, an NRCS Information Packet, and a Site Photograph Log are attached for your review. Written concurrence with the findings of this report should be obtained from the United States Army Corps of Engineers (USACE) prior to implementation of the proposed project. If you should have questions or require additional information, please feel free to contact me at (256) 303-7054 or Jeff Selby at (256) 476-7355.

Sincerely,

AST Environmental

Michael McConnell
Environmental Scientist

Jeff Selby, M.S.
Senior Biologist / Member

Attachments:

TABLES

Table 1. Stream or drainage features located on the 55 acre site. Inspiration Landing project. Sheffield, Colbert County, AL. December 11-12, 2018.

Drainage Feature	Linear Feet	Latitude	Longitude	USGS Blue-Line Mapped	Wet During Assessment
S-1	2,390	34.74753	-87.72009	Yes	Partially
F-1	170	34.74717	-87.71858	No	No
F-2a	130	34.74788	-87.71721	No	No
F-2b	230	34.74787	-87.71656	No	No
F-3	230	34.74933	-87.71579	No	Partially
F-4	410	34.75003	-87.71711	No	No
F-5	330	34.74953	-87.72271	No	No
F-6a	1,000	34.75006	-87.72136	No	No
F-6b	315	34.74944	-87.72043	No	No
F-7a	770	34.74895	-87.71902	No	No
F-7b	130	34.74857	-87.71848	No	No

WETLAND / UPLAND DATA SHEETS

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: JS18-123 City/County: Sheffield / Colbert Sampling Date: 12/11/18
Applicant/Owner: City of Sheffield State: AL Sampling Point: U-1
Investigator(s): MJM Section, Township, Range:
Landform (hillslope, terrace, etc.): terrace Local Relief (concave, convex, none): concave Slope (%): <5
Subregion (LRR or MLRA): LRRN Lat: 34.747396 Long: -87.719765 Datum: WGS84
Soil Map Unit Name: DeB; Decatur - Urban land complex NWI Classification: PF01A
Are climatic / hydrologic conditions on this site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___ Soil ___ or Hydrology ___ significantly disturbed? Are normal circumstances present? Yes X No ___
Are Vegetation ___ Soil ___ or Hydrology ___ naturally problematic? (if needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soils present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:
U-1 data point location is a riparian terrace.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)
- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)
- ___ Surface Soil Cracks (C6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (Includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is not present at U-1 data point location.
Wetland indicators are not present at U-1 data point location.

VEGETATION (Four Strata) - Use scientific names of plants. **Sampling point:** U-1

Tree Stratum (30' diameter plot)	Indicator Status	Absolute % Cover	Dominant Species
1. *Liquidambar styraciflua*	FAC	30	Y
2. *Celtis occidentalis*	FACU	20	Y
3. *Quercus nigra*	FAC	20	Y
4. *Acer negundo*	FAC	10	N
5. *Ligustrum sinense*	FACU	5	N
6.			
7.			
		85	= Total Cover
50% of total cover: 42.5	20% of total cover:	17	

Sapling/Shrub Stratum (15' diameter plot)			
1. *Ligustrum sinense*	FACU	60	Y
2. *Ilex verticillata*	FACW	10	N
3. *Ulmus rubra*	FAC	10	N
4.			
5.			
6.			
7.			
8.			
9.			
		80	= Total Cover
50% of total cover: 40	20% of total cover:	16	

Herb Stratum (5' diameter plot)			
1. *Viola sagittata*	FAC	30	Y
2. *Viola hirsutula*	FACU	20	Y
3. *Ligustrum sinense*	FACU	10	N
4. *Ilex verticillata*	FACW	10	N
5. *Smilax rotundifolia*	FAC	5	N
6.			
7.			
8.			
9.			
10.			
11.			
		75	= Total Cover
50% of total cover: 47.5	20% of total cover:	15	

Woody Vine Stratum (30' diameter plot)			
1. *Toxicodendron radicans*	FAC	30	Y
2. *Smilax rotundifolia*	FAC	30	Y
3.			
4.			
5.			
		60	= Total Cover
50% of total cover: 30	20% of total cover:	12	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (A): 5

Total Number of Dominant Species Across All Strata (B): 9

Percent of Dominant Species That Are OBL, FACW, or FAC (A): 55.6 %

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL Species 0	x 1 =	0
FACW Species 0	x 2 =	0
FAC Species 5	x 3 =	15
FACU Species 4	x 4 =	16
UPL Species 0	x 5 =	0
Column Totals: 9 (A)		31 (B)

Prevalence Index = B / A = 3.4

Hydrophytic Vegetation Indicators:

___ 1. Rapid Test for Hydrophytic Veg.
X 2. Dominance Test is >50%
___ 3. **Prevalence Index is ≤ 3.0 ***
___ 4. Morphological adaptations * (Provide supporting data)
___ Problematic Hydrophytic Veg. (Explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree - ≥ 3in. (7.6 cm) DBH

Sapling/Shrub - < 3in. DBH and > 3.28 ft. (1 m) tall

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants < 3.28 ft. tall

Woody vine - All woody vines > 3.28 ft. in height

Hydrophytic Vegetation Present?

Yes X
No ___

Remarks: (Include photo numbers here or on a separate sheet.)
A dominance of hydrophytic vegetation is present at U-1 data point location.
Facultative vegetation dominance test is is greater than 50%, at 55.6%.
Facultative vegetation prevalence index is not less than 3.0, at 3.4.

SOIL

Sampling point: U-1

Profile Description: (Describe to the depth needed to document the indicator or or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type *	Loc **	Texture	Remarks
0-3	5 YR 3/1	100					sandy loam and gravel	
3-8+	7.5 YR 4/4	65	7.5 YR 3/2	35			sandy loam and gravel	

* Type: C=Concretion, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains ** Location: PL=Pore Lining, M=Matrix

Hydric Soils Indicators:

___ Histosols (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) (LRR N)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Minerals (S1) (LRR N, MLRA 147, 148)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surfaces (S7)
___ Polyvalue Below Surface (S8) (MLRA 147, 148)
___ Thin Dark Surface (S9) (MLRA 147, 148)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F-12) (LRR N, MLRA 136)
___ Umbric Surface (F13) (MLRA 136, 122)
___ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators of Problematic Hydric Soils ***

___ 2 cm muck (A10) (MLRA 147)
___ Coast Prairie Redox (A16) (MLRA 147, 148)
___ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*** Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soils present ?

Yes _____
No X

Remarks:
Hydric soils are not present at U-1 data point location.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: JS18-123 City/County: Sheffield / Colbert Sampling Date: 12/11/18
Applicant/Owner: City of Sheffield State: AL Sampling Point: U-2
Investigator(s): MJM Section, Township, Range:
Landform (hillslope, terrace, etc.): ephemeral Local Relief (concave, convex, none): concave Slope (%): <5
Subregion (LRR or MLRA): LRRN Lat: 34.747922 Long: -87.721028 Datum: WGS84
Soil Map Unit Name: DeB; Decatur - Urban land complex NWI Classification: none
Are climatic / hydrologic conditions on this site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___ Soil ___ or Hydrology ___ significantly disturbed? Are normal circumstances present? Yes X No ___
Are Vegetation ___ Soil ___ or Hydrology ___ naturally problematic? (if needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soils present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks:
U-2 data point location is within a draw along an ephemeral drainage.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (C6)
___ Sparsely Vegetated Concave Surface (B8)
X Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X ___ Depth (inches): ___
Water table Present? Yes ___ No X ___ Depth (inches): ___
Saturation Present? (Includes capillary fringe) Yes ___ No X ___ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is not present at U-2 data point location.
Wetland indicators are not present at U-2 data point location.

VEGETATION (Four Strata) - Use scientific names of plants. **Sampling point:** U-2

Tree Stratum (30' diameter plot)	Indicator Status	Absolute % Cover	Dominant Species
1. *Liquidambar styraciflua*	FAC	40	Y
2. *Celtis occidentalis*	FACU	30	Y
3. *Quercus nigra*	FAC	15	Y
4. *Ligustrum sinense*	FACU	5	N
5.			
6.			
7.			
		90	= Total Cover

50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum (15' diameter plot)			
1. *Ligustrum sinense*	FACU	60	Y
2. *Ilex opaca*	FACU	20	N
3.			
4.			
5.			
6.			
7.			
8.			
9.			
		80	= Total Cover

50% of total cover: 40 20% of total cover: 16

Herb Stratum (5' diameter plot)			
1. *Ligustrum sinense*	FACU	20	Y
2. *Smilax rotundifolia*	FAC	15	Y
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		35	= Total Cover

50% of total cover: 17.5 20% of total cover: 7

Woody Vine Stratum (30' diameter plot)			
1. *Toxicodendron radicans*	FAC	35	Y
2. *Smilax rotundifolia*	FAC	25	Y
3.			
4.			
5.			
		60	= Total Cover

50% of total cover: 30 20% of total cover: 12

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (A): 5

Total Number of Dominant Species Across All Strata (B): 8

Percent of Dominant Species That Are OBL, FACW, or FAC (A/B): 62.5 %

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL Species 0	x 1 =	0
FACW Species 0	x 2 =	0
FAC Species 5	x 3 =	15
FACU Species 3	x 4 =	12
UPL Species 0	x 5 =	0
Column Totals: 8 (A)		27 (B)

Prevalence Index = B / A = 3.4

Hydrophytic Vegetation Indicators:

___ 1. Rapid Test for Hydrophytic Veg.
X 2. Dominance Test is >50%
___ 3. **Prevalence Index is ≤ 3.0 ***
___ 4. Morphological adaptations * (Provide supporting data)
___ Problematic Hydrophytic Veg. (Explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree - ≥ 3in. (7.6 cm) DBH

Sapling/Shrub - < 3in. DBH and > 3.28 ft. (1 m) tall

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants < 3.28 ft. tall

Woody vine - All woody vines > 3.28 ft. in height

Hydrophytic Vegetation Present?

Yes X
No ___

Remarks: (Include photo numbers here or on a separate sheet.)
A dominance of hydrophytic vegetation is present at U-2 data point location.
Facultative vegetation dominance test is is greater than 50%, at 62.5%.
Facultative vegetation prevalence index is not less than 3.0, at 3.4.

SOIL

Sampling point: U-2

Profile Description: (Describe to the depth needed to document the indicator or or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type *	Loc **	Texture	Remarks
0-8+	10 YR 4/3	100					silt loam	and gravel

* Type: C=Concretion, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains ** Location: PL=Pore Lining, M=Matrix

Hydric Soils Indicators:

___ Histosols (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) (LRR N)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Minerals (S1) (LRR N, MLRA 147, 148)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surfaces (S7)
___ Polyvalue Below Surface (S8) (MLRA 147, 148)
___ Thin Dark Surface (S9) (MLRA 147, 148)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F-12) (LRR N, MLRA 136)
___ Umbric Surface (F13) (MLRA 136, 122)
___ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators of Problematic Hydric Soils ***

___ 2 cm muck (A10) (MLRA 147)
___ Coast Prairie Redox (A16) (MLRA 147, 148)
___ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*** Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soils present ?

Yes _____
No X

Remarks:
Hydric soils are not present at U-2 data point location.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: JS17-116 City/County: Sheffield / Colbert Sampling Date: 12/12/18
Applicant/Owner: Engineering Design Technologies, Inc. (EDT) State: AL Sampling Point: U-3
Investigator(s): MJM Section, Township, Range:
Landform (hillslope, terrace, etc.): hillslope Local Relief (concave, convex, none): concave Slope (%): <8
Subregion (LRR or MLRA): LRRN Lat: 34.749292 Long: -87.719035 Datum: WGS84
Soil Map Unit Name: FaD; Fullerton gravelly silt loam NWI Classification: none
Are climatic / hydrologic conditions on this site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___ Soil ___ or Hydrology ___ significantly disturbed? Are normal circumstances present? Yes X No ___
Are Vegetation ___ Soil ___ or Hydrology ___ naturally problematic? (if needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___ Hydric Soils present? Yes ___ No X Wetland Hydrology Present? Yes ___ No X	**Is the Sampled Area within a Wetland?** Yes ___ No X

Remarks:
U-3 data point location is within a draw between ridges.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)
- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)
- ___ Surface Soil Cracks (C6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:
Surface Water Present? Yes ___ No X Depth (inches): ___
Water table Present? Yes ___ No X Depth (inches): ___
Saturation Present? (Includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is not present at U-3 data point location.
Wetland indicators are not present at U-3 data point location.

VEGETATION (Four Strata) - Use scientific names of plants. **Sampling point:** U-3

Tree Stratum (30' diameter plot)	Indicator Status	Absolute % Cover	Dominant Species
1. *Acer negundo*	FAC	30	Y
2. *Quercus nigra*	FAC	20	Y
3. *Carya lacinosa*	FAC	20	Y
4. *Liquidambar styraciflua*	FAC	10	N
5. *Aesculus pavia*	FAC	5	N
6.			
7.			
		85	= Total Cover
50% of total cover: 42.5		20% of total cover:	17

Sapling/Shrub Stratum (15' diameter plot)			
1. *Ligustrum sinense*	FACU	60	Y
2. *Aesculus pavia*	FAC	15	N
3. *Liquidambar styraciflua*	FAC	10	N
4.			
5.			
6.			
7.			
8.			
9.			
		85	= Total Cover
50% of total cover: 42.5		20% of total cover:	17

Herb Stratum (5' diameter plot)			
1. *Toxicodendron radicans*	FAC	15	Y
2. *Campsis radicans*	FAC	10	Y
3. *Athyrium asplenoides*	FAC	5	N
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		30	= Total Cover
50% of total cover: 15		20% of total cover:	6

Woody Vine Stratum (30' diameter plot)			
1. *Toxicodendron radicans*	FAC	15	Y
2. *Smilax rotundifolia*	FAC	10	Y
3.			
4.			
5.			
		25	= Total Cover
50% of total cover: 12.5		20% of total cover:	5

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (A): 7

Total Number of Dominant Species Across All Strata (B): 8

Percent of Dominant Species That Are OBL, FACW, or FAC (A): 87.5 %

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL Species 0	x 1 =	0
FACW Species 0	x 2 =	0
FAC Species 7	x 3 =	21
FACU Species 1	x 4 =	4
UPL Species 0	x 5 =	0
Column Totals: 8 (A)		25 (B)

Prevalence Index = B / A = 3.1

Hydrophytic Vegetation Indicators:

- ___ 1. Rapid Test for Hydrophytic Veg.
- X 2. Dominance Test is >50%
- ___ **3. Prevalence Index is ≤ 3.0 ***
- ___ 4. Morphological adaptations * (Provide supporting data)
- ___ Problematic Hydrophytic Veg. (Explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree - ≥ 3in. (7.6 cm) DBH

Sapling/Shrub - < 3in. DBH and > 3.28 ft. (1 m) tall

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants < 3.28 ft. tall

Woody vine - All woody vines > 3.28 ft. in height

Hydrophytic Vegetation Present?

Yes X

No ___

Remarks: (Include photo numbers here or on a separate sheet.)
A dominance of hydrophytic vegetation is present at U-3 data point location.
Facultative vegetation dominance test is is greater than 50%, at 87.5%.
Facultative vegetation prevalence index is not less than 3.0, at 3.1.

SOIL

Sampling point: U-3

Profile Description: (Describe to the depth needed to document the indicator or or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type *	Loc **	Texture	Remarks
0-8	10 YR 4/3	70	10 YR 4/4	30			silt loam and gravel	
8+							gravel layer	

* Type: C=Concretion, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains ** Location: PL=Pore Lining, M=Matrix

Hydric Soils Indicators:

- ___ Histosols (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) (LRR N)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Minerals (S1) (LRR N, MLRA 147, 148)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surfaces (S7)
- ___ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ___ Thin Dark Surface (S9) (MLRA 147, 148)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F-12) (LRR N, MLRA 136)
- ___ Umbric Surface (F13) (MLRA 136, 122)
- ___ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators of Problematic Hydric Soils ***

- ___ 2 cm muck (A10) (MLRA 147)
- ___ Coast Prairie Redox (A16) (MLRA 147, 148)
- ___ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*** Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soils present ?

Yes _____

No X

Remarks:

Hydric soils are not present at U-3 data point location.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: JS17-116 City/County: Sheffield / Colbert Sampling Date: 12/12/18
Applicant/Owner: Engineering Design Technologies, Inc. (EDT) State: AL Sampling Point: U-4
Investigator(s): MJM Section, Township, Range:
Landform (hillslope, terrace, etc.): hillslope Local Relief (concave, convex, none): concave Slope (%): <8
Subregion (LRR or MLRA): LRRN Lat: 34.750162 Long: -87.721331 Datum: WGS84
Soil Map Unit Name: FaD; Fullerton gravelly silt loam NWI Classification: none
Are climatic / hydrologic conditions on this site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___ Soil ___ or Hydrology ___ significantly disturbed? Are normal circumstances present? Yes X No ___
Are Vegetation ___ Soil ___ or Hydrology ___ naturally problematic? (if needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soils present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:
U-4 data point location is within a draw.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)
___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)
___ Surface Soil Cracks (C6)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:
Surface Water Present? Yes ___ No X Depth (inches): ___
Water table Present? Yes ___ No X Depth (inches): ___
Saturation Present? (Includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is not present at U-4 data point location.
Wetland indicators are not present at U-4 data point location.

VEGETATION (Four Strata) - Use scientific names of plants. **Sampling point:** U-4

Tree Stratum (30' diameter plot)	Indicator Status	Absolute % Cover	Dominant Species
1. *Celtis occidentalis*	FACU	50	Y
2. *Acer negundo*	FAC	25	Y
3. *Liquidambar styraciflua*	FAC	10	N
4.			
5.			
6.			
7.			
		85	= Total Cover

50% of total cover: 42.5 20% of total cover: 17

Sapling/Shrub Stratum (15' diameter plot)			
1. *Ligustrum sinense*	FACU	90	Y
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
		90	= Total Cover

50% of total cover: 45 20% of total cover: 18

Herb Stratum (5' diameter plot)			
1. Ligustrum sinense	FACU	50	Y
2. *Toxicodendron radicans*	FAC	20	Y
3. *Campsis radicans*	FAC	20	Y
4. *Arundinaria tecta*	FACW	5	N
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		95	= Total Cover

50% of total cover: 47.5 20% of total cover: 19

Woody Vine Stratum (30' diameter plot)			
1. *Toxicodendron radicans*	FAC	50	Y
2. *Smilax rotundifolia*	FAC	20	Y
3. *Lonicera japonica*	FAC	20	Y
4.			
5.			
		90	= Total Cover

50% of total cover: 45 20% of total cover: 18

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (A): 6

Total Number of Dominant Species Across All Strata (B): 9

Percent of Dominant Species That Are OBL, FACW, or FAC (A): 66.7 %

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL Species 0	x 1 =	0
FACW Species 0	x 2 =	0
FAC Species 6	x 3 =	18
FACU Species 3	x 4 =	12
UPL Species 0	x 5 =	0
Column Totals: 9 (A)		30 (B)

Prevalence Index = B / A = 3.3

Hydrophytic Vegetation Indicators:

- ___ 1. Rapid Test for Hydrophytic Veg.
- X 2. Dominance Test is >50%
- ___ 3. Prevalence Index is ≤ 3.0 *
- ___ 4. Morphological adaptations * (Provide supporting data)
- ___ Problematic Hydrophytic Veg. (Explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree - ≥ 3in. (7.6 cm) DBH

Sapling/Shrub - < 3in. DBH and > 3.28 ft. (1 m) tall

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants < 3.28 ft. tall

Woody vine - All woody vines > 3.28 ft. in height

Hydrophytic Vegetation Present?

Yes X

No ___

Remarks: (Include photo numbers here or on a separate sheet.)
A dominance of hydrophytic vegetation is present at U-4 data point location.
Facultative vegetation dominance test is is greater than 50%, at 66.7%.
Facultative vegetation prevalence index is not less than 3.0, at 3.3.

SOIL

Sampling point: U-4

Profile Description: (Describe to the depth needed to document the indicator or or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type *	Loc **	Texture	Remarks
0-8	10 YR 4/3	75	10 YR 4/4	25			silt loam	and gravel
8+							gravel layer	

* Type: C=Concretion, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains ** Location: PL=Pore Lining, M=Matrix

Hydric Soils Indicators:

___ Histosols (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) (LRR N)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Minerals (S1) (LRR N, MLRA 147, 148)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surfaces (S7)
___ Polyvalue Below Surface (S8) (MLRA 147, 148)
___ Thin Dark Surface (S9) (MLRA 147, 148)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F-12) (LRR N, MLRA 136)
___ Umbric Surface (F13) (MLRA 136, 122)
___ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators of Problematic Hydric Soils ***

___ 2 cm muck (A10) (MLRA 147)
___ Coast Prairie Redox (A16) (MLRA 147, 148)
___ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*** Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soils present ?

Yes _____
No X

Remarks:
Hydric soils are not present at U-4 data point location.

STREAM DATA SHEETS

Inspiration Landing
55-acre site

NC DWQ Stream Identification Form Version 4.11 S-1

Date: 12/11/2018	Project/Site: JS18-123	Latitude: 34.74753
Evaluator: Mike McConnell	County: Colbert	Longitude: -87.72009
Total Points: 26 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 14.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	(2)	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

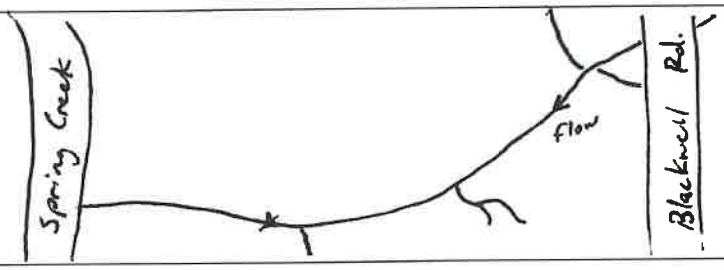
B. Hydrology (Subtotal = 3.5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = (0)		Yes = 3	

C. Biology (Subtotal = 8)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	0	(0.5)	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	0	0.5	(1)	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = (1.5) Other = 0			

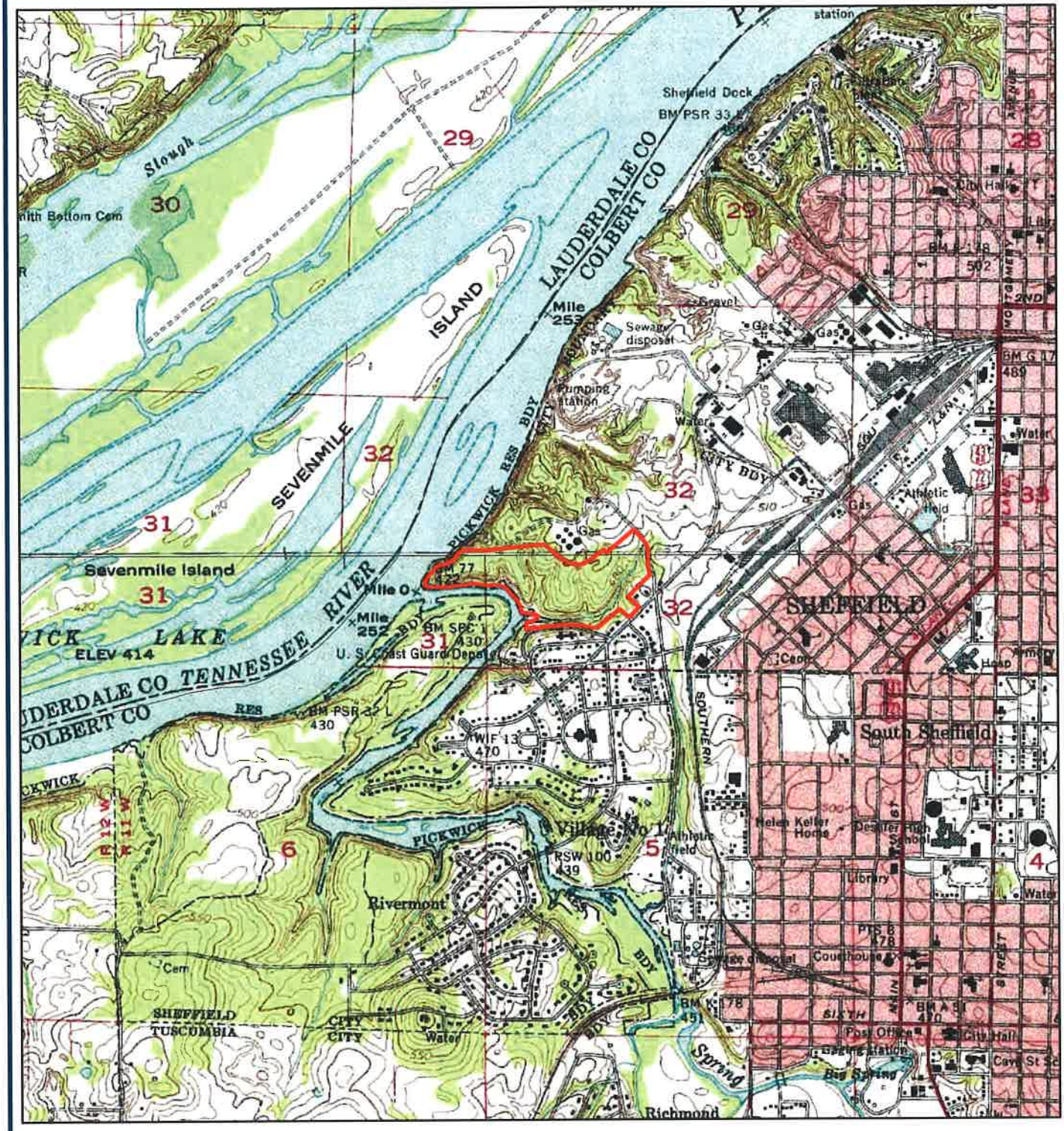
*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:



MAPS



0 0.5 1 Miles

SCALE = 1 : 24,000

Site Boundary - 55 acres

N

SITE MAP
JS18-123
Sheffield, AL

AST Environmental

SOURCE: USDA - NRCS DRG and
2015 NAIPM: Colbert County, Alabama

0 500 1,000 Feet

SCALE = 1 : 6,000

Intermittent Stream

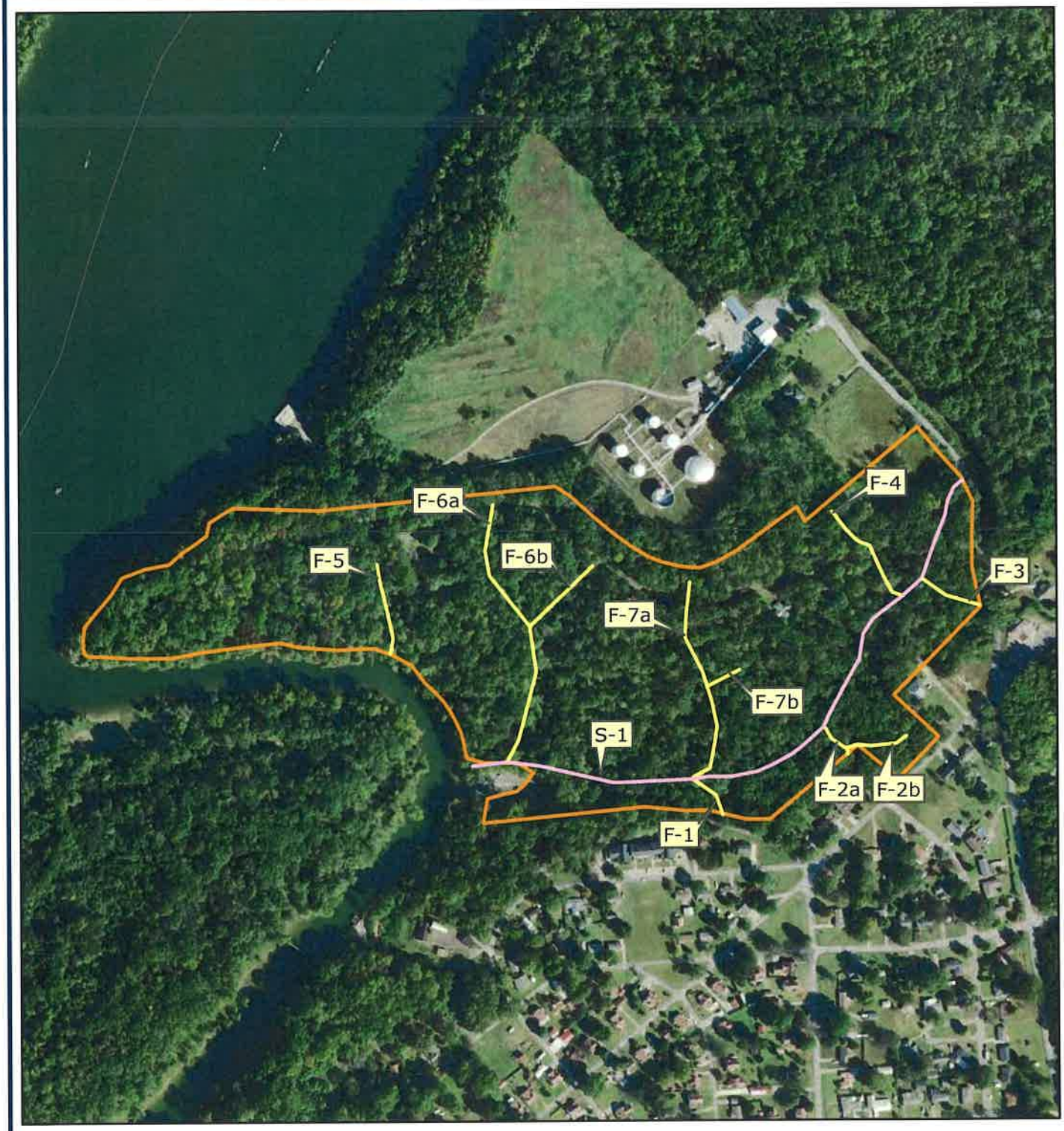
Ephemeral Drainage Feature

N

STREAM FEATURES MAP 1
JS18-123
Sheffield, AL

AST Environmental

SOURCE: USDA - NRCS DRG and
2015 NAIPM: Colbert County, Alabama



0 500 1,000 Feet

SCALE = 1 : 6,000

Intermittent Stream

Ephemeral Drainage Feature

N

STREAM FEATURES MAP 2
JS18-123
Sheffield, AL

AST Environmental

SOURCE: USDA - NRCS DRG and
2015 NAIPM: Colbert County, Alabama

0 500 1,000 Feet

SCALE = 1 : 6,000

Intermittent Stream

Ephemeral Drainage Feature

X Data Point Location

N

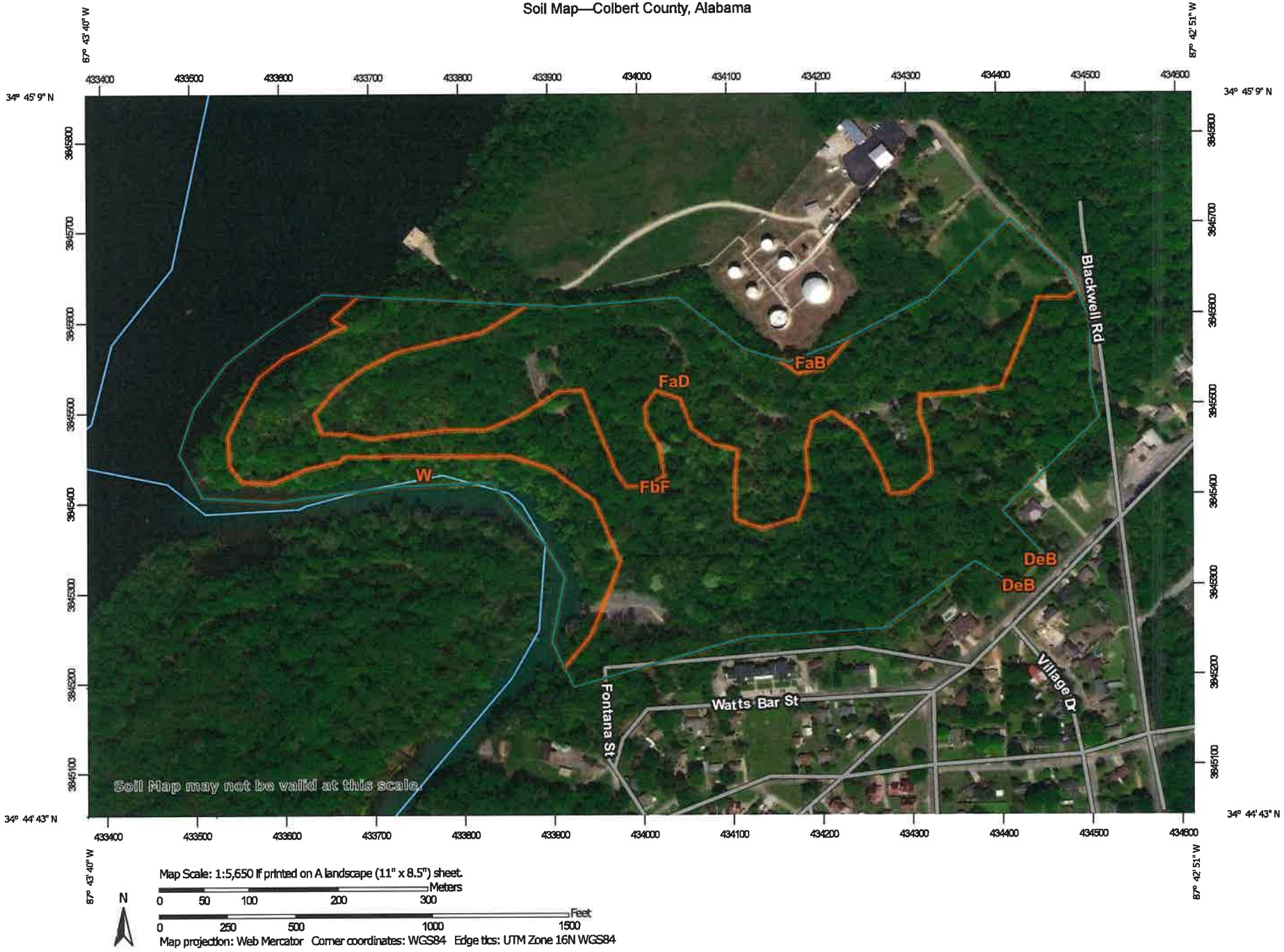
DATA POINT LOCATION MAP
JS18-123
Sheffield, AL

AST Environmental

SOURCE: USDA - NRCS DRG and
2015 NAIPM: Colbert County, Alabama

NRCS WEB SOIL SURVEY PACKET

Soil Map—Colbert County, Alabama



Map Scale: 1:5,650 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Colbert County, Alabama
Survey Area Data: Version 11, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 14, 2015—Jun 26, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DeB	Decatur-Urban land complex, 2 to 8 percent slopes	0.0	0.0%
FaB	Fullerton gravelly silt loam, 2 to 6 percent slopes	0.2	0.3%
FaD	Fullerton gravelly silt loam, 6 to 15 percent slopes	25.4	36.0%
FbF	Fullerton-Bodine complex, 15 to 45 percent slopes	36.2	51.3%
W	Water	8.6	12.3%
Totals for Area of Interest		**70.5**	**100.0%**

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components–AL033-Colbert County, Alabama					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
DeB: Decatur-Urban land complex, 2 to 8 percent slopes	Decatur	40-50	Interfluves	No	—
	Urban land	35-45	Interfluves	No	—
	Emory-Ponded	0-5	Interfluves	No	—
	Etowah	0-5	Interfluves	No	—
	Pruitton	0-5	Interfluves	No	—
	Sullivan	0-5	Interfluves	No	—
	Guthrie	0-5	Interfluves	Yes	2
	Fullerton	0-5	Interfluves	No	—
	Chenneby-Occasionally flooding	0-5	Interfluves	No	—
FaB: Fullerton gravelly silt loam, 2 to 6 percent slopes	Fullerton	80-90	Ridges	No	—
	Bodine	0-10	Ridges	No	—
	Bewleyville	0-5	Ridges	No	—
	Decatur	0-5	Ridges	No	—
FaD: Fullerton gravelly silt loam, 6 to 15 percent slopes	Fullerton	80-100	Ridges	No	—
	Bodine	3-10	Ridges	No	—
	Dickson	0-6	Ridges	No	—
	Lee	0-3	Flood plains	Yes	2
FbF: Fullerton-Bodine complex, 15 to 45 percent slopes	Fullerton	45	High hills	No	—
	Bodine	35	Mountain slopes	No	—
	Bewleyville	4	Ridges	No	—
	Decatur	4	Ridges	No	—
	Guthrie	4	Flood plains	Yes	2
	Barfield	4	High hills	No	—
W: Water	Water	100	—	No	—

Data Source Information

Soil Survey Area: Colbert County, Alabama
Survey Area Data: Version 11, Sep 12, 2018

PHOTOGRAPHS

PHOTOGRAPH 1

Stream S-1. Facing downstream / west near its connection with Spring Creek. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 2

Stream S-1. Facing upslope / east near its connection with Spring Creek. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 3

Stream S-1. Facing upslope / east from a location near the central portion of the on-site stream reach. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 4

Stream S-1. Facing downslope / southwest near the eastern assessment area boundary. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 5

Feature F-1 and Fontana Street culvert. Facing upslope / south near its origin. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 6

Feature F-1 at its connection with Stream S-1. Facing upslope / southeast. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 7

Feature F-2a (right branch) at its connection with Stream S-1 (left branch). Facing upslope / southeast. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 8

Feature F-2a (right branch) at its connection with Feature F-2b (left branch). Facing upslope / east. Taken by Mike McConnell, 12-12-18.

PHOTOGRAPH 9

Feature F-2b (right branch) at its connection with Feature F-2a (left branch). Facing downslope / west. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 10

Feature F-2b. Facing upslope / east near its origin. Taken by Mike McConnell, 12-12-18.

PHOTOGRAPH 11

Feature F-3 (right branch) at its connection with Stream S-1 (left branch). Facing upslope / southeast. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 12

Feature F-3 and Blackwell Road culvert. Facing upslope / southeast. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 13

Feature F-4. Facing upslope / north near its origin. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 14

Feature F-4 near its connection with Stream S-1. Facing downslope / south. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 15

Feature F-5 near its connection with Spring Creek. Facing downslope / south. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 16

Feature F-5. Facing upslope / north near its origin. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 17

Feature F-6a (joins with walking / ATV trail) at its connection with Stream S-1. Facing upslope / north. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 18

Feature F-6a and city park road culvert. Facing upslope / north near its origin. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 19

Feature F-6b. Facing upslope / northeast from near its connection with Feature F-6a. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 20

Feature F-6b and city park road culvert. Facing upslope / northeast near its origin. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 21

Feature F-7a and city park road culvert. Facing downslope / south near its origin. Taken by Mike McConnell, 12-12-18.

PHOTOGRAPH 22

Feature F-7a (right branch) at its connection with Feature S-1 (left branch). Facing downslope / southwest. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 23

Feature F-7b. Facing downslope / southwest near its origin. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 24

Upland U-1 data point location. Facing east. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 25

Upland U-2 data point location. Facing north. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 26

Upland U-3 data point location. Facing north. Taken by Mike McConnell, 12-11-18.

PHOTOGRAPH 27

Upland U-4 data point location. Facing south. Taken by Mike McConnell, 12-12-18.

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Office of Archaeological Research

March 8, 2019

Mayor Ian Sanford
City of Sheffield
PO Box 380
Sheffield, Alabama 35660

OAR PROJECT NUMBER: 19-128

Dear Mayor Sanford:

Please find enclosed a copy of our report entitled "Archaeological Assessment of the Proposed Tuscumbia Landing Trail System in Colbert County, Alabama", by Jeremiah L. Stager and Dr. A. Brooke Persons of our staff.

It has been a pleasure to be of service to the City of Sheffield, Alabama. Please feel free to call for further information or services.

Sincerely,

Matthew D. Gage RPA, Director
The University of Alabama
Office of Archaeological Research

MDG:tkw
FILE:2018-19SURVEY FCL/1

Enclosures: Survey Report

ARCHAEOLOGICAL ASSESSMENT OF THE PROPOSED TUSCUMBIA LANDING TRAIL SYSTEM IN COLBERT COUNTY, ALABAMA

Jeremiah l. Stager
Dr. A. Brooke Persons

PERFORMED FOR:
City of Sheffield
PO Box 380
Sheffield, Alabama 35660

MARCH 2019

Office of Archaeological Research

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March 8, 2019

ARCHAEOLOGICAL ASSESSMENT OF THE PROPOSED TUSCUMBIA LANDING TRAIL SYSTEM IN COLBERT COUNTY, ALABAMA

OAR PROJECT NUMBER: 19-128
AHC TRACKING NUMBER: None Assigned

PERFORMED FOR: City of Sheffield
PO Box 380
Sheffield, Alabama 35660
Attn: Mayor Ian Sanford and Mr. Steve Stanley

PERFORMED BY: Jeremiah l. Stager, Cultural Resources Assistant
Donald Brown, Cultural Resources Assistant
Russell Holloway, Cultural Resources Assistant, Senior
Ronald Stallworth, Cultural Resources Assistant
The University of Alabama
Office of Archaeological Research
13075 Moundville Archaeological Park
Moundville, Alabama 35474

DATE PERFORMED: January 22 – 25, 2019

Jeremiah L. Stager
Cultural Resources Assistant
Office of Archaeological Research

Matthew D. Gage RPA, Director
Office of Archaeological Research
The University of Alabama

Dr. A. Brooke Persons, RPA
Cultural Resources Investigator
Office of Archaeological Research

Archaeological Assessment of the Proposed Tuscumbia Landing Trail System in Colbert County, Alabama

Jeremiah L. Stager
Dr. A. Brooke Persons

Management Summary

The University of Alabama, Office of Archaeological Research (OAR) was contracted by the City of Sheffield to perform an archaeological assessment of the proposed Tuscumbia Landing Trail System, in Colbert County, Alabama. The archaeological assessment endeavors to identify linear areas for hiking trails within the Tuscumbia Landing Park that avoid archaeological deposits and above ground features. The Area of Potential Effect (APE) consists of a linear 1,674 meters (5,492 ft) of proposed trail and 383 m (1,256.5 ft) of wagon road previously used as a walking trail within the Tuscumbia Landing Historic Site, including a primary trail that bisects the site core along the ridge spur, a southern trail that follows the slope down towards the riverbank to the west, and a smaller secondary trail off of the northern trail. Field investigations for the project were undertaken January 22 to 25, 2019. Jeremiah Stager, Cultural Resources Assistant, serves as the Project Director. The Principal Investigator for the project is Matthew D. Gage RPA, Director of OAR.

Tuscumbia Landing is a part of the Trail of Tears National Historic Trail, designated as a part of a multi-property National Register of Historic Places (NRHP) property in 2003. Tuscumbia Landing itself is situated within a 57.94-acre park that is currently not open to the general public, and it is bordered to the east by Park West, a municipal park that is also currently closed. Tuscumbia Landing is a multicomponent site with multiple periods of significance, and remnants of prior prehistoric and historic occupation are evident throughout the site. Previously documented resources within Tuscumbia Landing include 1Ct292, the Tuscumbia Landing archaeological site, and 1Ct291, a Late Woodland period site on the bank of the Tennessee Rover. In addition, resources associated with the ca. 1832 Tuscumbia, Courtland, and Decatur (TC&D) Railroad and the ca. 1918 Nitrate Plant No. 1, an ammonium nitrate crystallization plant, extend into Tuscumbia Landing and its immediate environments. Of these, 1Ct292 is included as a part of a multiple property NRHP listing for the Trail of Tears; the TC&D was the first railroad built west of the Appalachian Mountains and is a contributing element to the NRHP listing. Previously identified resources associated with 1Ct292 include nine structural foundations, a possible Trail of Tears burial ground, a wagon road, and a variable surface artifact scatter; previously identified resources associated with 1Ct291 include artifacts eroding at the shoreline of the Tennessee River at the base of the ridge; and resources associated with the TC&D include the former railbed berm and terminus. It is unclear how much of the TC&D berm survived when the larger berm was built for Nitrate Plant No.1.

During the cultural resources survey, the boundaries of Site 1Ct292 were expanded to encompass additional artifact scatter on both north and south slopes. A Late Archaic component was identified on the southern edge of the ridge. The 1Ct292 archaeological site was expanded to the east and southeast to include structural and artifact remnants of Nitrate Plant No.1 and possible wagon road remnants associated with Tuscumbia Landing. Features associated with Nitrate Plant No. 1 within Tuscumbia Landing include the foundations of two experimental ammonium nitrate crystallization buildings, additional concrete footers and pads, a two-stall tiled concrete shower

foundation, and an associated water intake building located next to the nearby boat launch on Spring Creek. The wagon road remnants consisted of a delineated earthen path running down the slope south of the Park West parking lot, lying adjacent to a nitrate plant footpath leading to the intake building on Spring Creek. The wagon road remnant is attributed to the 19th century use of the site, since the more recent 20th century nitrate plant sewer access road and footpath seem to displace or obscure it at the base of the ridge spur near the boat launch. To the northeast of Park West, the railroad berm that began at the ammonium nitrate crystallization buildings and ran toward the main plant has been added to the site boundary given the local and national significance of Nitrate Plant No. 1.

The western portion of Site 1Ct292 is in remarkable condition given the degree of ground disturbance resulting from mechanical excavation, grading, railroad berm construction, and subsequent removal that took place when the site was utilized in conjunction with the Nitrate Plant No. 1. Although the core of the Nitrate Plant No. 1 is located 950 m to the northeast of the Tuscumbia Landing, some features do extend into the Tuscumbia Landing property. The area surrounding the nine previously identified 1830s Tuscumbia Landing structures at the tip of the ridge appear to be relatively undisturbed since their burning and dismantling in the mid-nineteenth century as Union soldiers retreated in 1862. A shovel test adjacent to the footpath near Structure 9 revealed intact and burned deposits. Even within the areas affected by the construction of the nitrate plant in the eastern extent of the site, shovel testing seems to indicate that there is potential for intact deposits associated with both historic and prehistoric sites. However, a proposed trail system within the site may be constructed to cause minimal disturbance to on site resources. For example, the wagon road remnant along the southern slope of has already been used as a pedestrian trail and was free of surface artifacts, with the exception of a couple handmade brick fragments. Shovel testing along the southern slope seemed to indicate the potential for a path below less impacted remnants of the wagon road that would not disturb intact artifact deposits. Additionally, on the northern slope below the potential Trail of Tears burial ground there was an area free of positive shovel tests. Though steep, there is already a wildlife trail in this area and a modern chain link fence has already disturbed the ground. Based on these findings, it is the opinion of this office that the proposed trail system and the increased foot traffic within the site will have an adverse effect the NRHP-listed Tuscumbia Landing site (1Ct292). However, the impact will be limited provided that the existing trails continue to be used and additional trails are on designated routes prescribed by OAR.

Table 1. Summary of historic properties identified.

Historic Property	Temporal/Cultural Affiliation or Historic Property Type	Recommendation for Listing to the NRHP (Ineligible/Eligible/Listed)
Tuscumbia Landing Trail of Tears National Historic Trail (1Ct292)	Late Paleoindian – Late Archaic, Historic steamboat landing, terminus for the TC&D Railroad, itinerant campsite during the Trail of Tears (1838-1839), Civil War battleground, and Nitrate Plant No. 1 site	Listed (Criteria A and D) 1981 and included in Multiple Property Nomination 2003
1Ct291 (along the northern shoreline adjacent to Tuscumbia Landing)	Late Woodland Shell Midden	Ineligible
Tuscumbia, Courtland, and Decatur Railroad	1832 railway and associated railbed	Contributing Element to NRHP-listed Tuscumbia Landing site

TABLE OF CONTENTS

Contents Page

LIST OF FIGURES

Archaeological Assessment of the Proposed Tuscumbia Landing Trail System in Colbert County, Alabama

Jeremiah L. Stager
Dr. A. Brooke Persons

Introduction

The University of Alabama, Office of Archaeological Research (OAR) was contracted by the City of Sheffield, Alabama to perform an archaeological assessment of the proposed Tuscumbia Landing Trail System, in Colbert County, Alabama. The Area of Potential Effect (APE) consists of a linear 2,057 meters (6,748.7 ft) of proposed trail within the Tuscumbia Landing Historic Site, including a primary trail that bisects the site core along the ridge spur, a southern trail that follows the slope down towards the riverbank to the west, and a smaller secondary trail off of the northern trail. The archaeological assessment endeavors to identify linear areas where hiking trails can be designated that avoid archaeological deposits and above ground features. Jeremiah Stager (Cultural Resources Assistant), assisted by Donald Brown (Cultural Resources Assistant), Russell Holloway (Cultural Resources Assistant, Senior), and Ronald Stallworth (Cultural Resources Assistant) conducted the survey during the period January 22-25, 2019 to locate and identify any archaeological sites or historic standing structures. Map production and Geographic Information Systems (GIS) compilation were conducted by Samuel D. Mizelle II (Cultural Resources Investigator) and Danielle Schaffeld (GIS and Graphics Technician). The report was compiled by Tamela K. Wilson (Cultural Resources Technical Writer) and edited by Dr. A. Brooke Persons (Cultural Resources Investigator) and Kristen R. Reed (Cultural Resources Investigator). The Principal Investigator for the project is Matthew D. Gage RPA, Director of OAR.

The lead federal agency for the proposed project is the United States Department of Agriculture (USDA). Permitting for the project requires compliance with Title 54 of the United States Code, Subtitle III – National Preservation Programs, Division A – Historic Preservation, Subdivision 5 – Federal Agency Historic Preservation Responsibilities, Chapter 3061, Subchapter I – In General, Section 306108 – Effect of undertaking on historic property (54 USC 306108 formerly Section 106 of the National Historic Preservation Act of 1966 as amended).

The research design of the cultural resources survey is to locate and identify any archaeological sites and historic standing structures within the APE, assess their significance, and provide recommendation with regard to guidelines set forth by the National Park Service (NPS) for National Register of Historic Places (NRHP) eligibility criteria (NPS 1995). Included in this report is a discussion of the environmental setting of the survey area, a literature search of any previously recorded sites or previously conducted surveys within or near the survey area, a description of field and laboratory methods, the results of the cultural resources survey, and conclusions and recommendations based on the findings of this survey.

Environmental Setting

The APE for the proposed trail system project can be seen on the 1971, USGS, 7.5', Tuscumbia, Alabama topographic quadrangle, stretching from the W ½ of the SW ¼ of Section 32 to the SE ½ of the SE ¼ of Section 31. The northern portion of the APE can be seen on the 1971, USGS, 7.5', Florence, Alabama topographic quadrangle in the S ½ of the NW ¼ of the SW ¼ of Section 32, all in T3S, R11W (Figure 1).

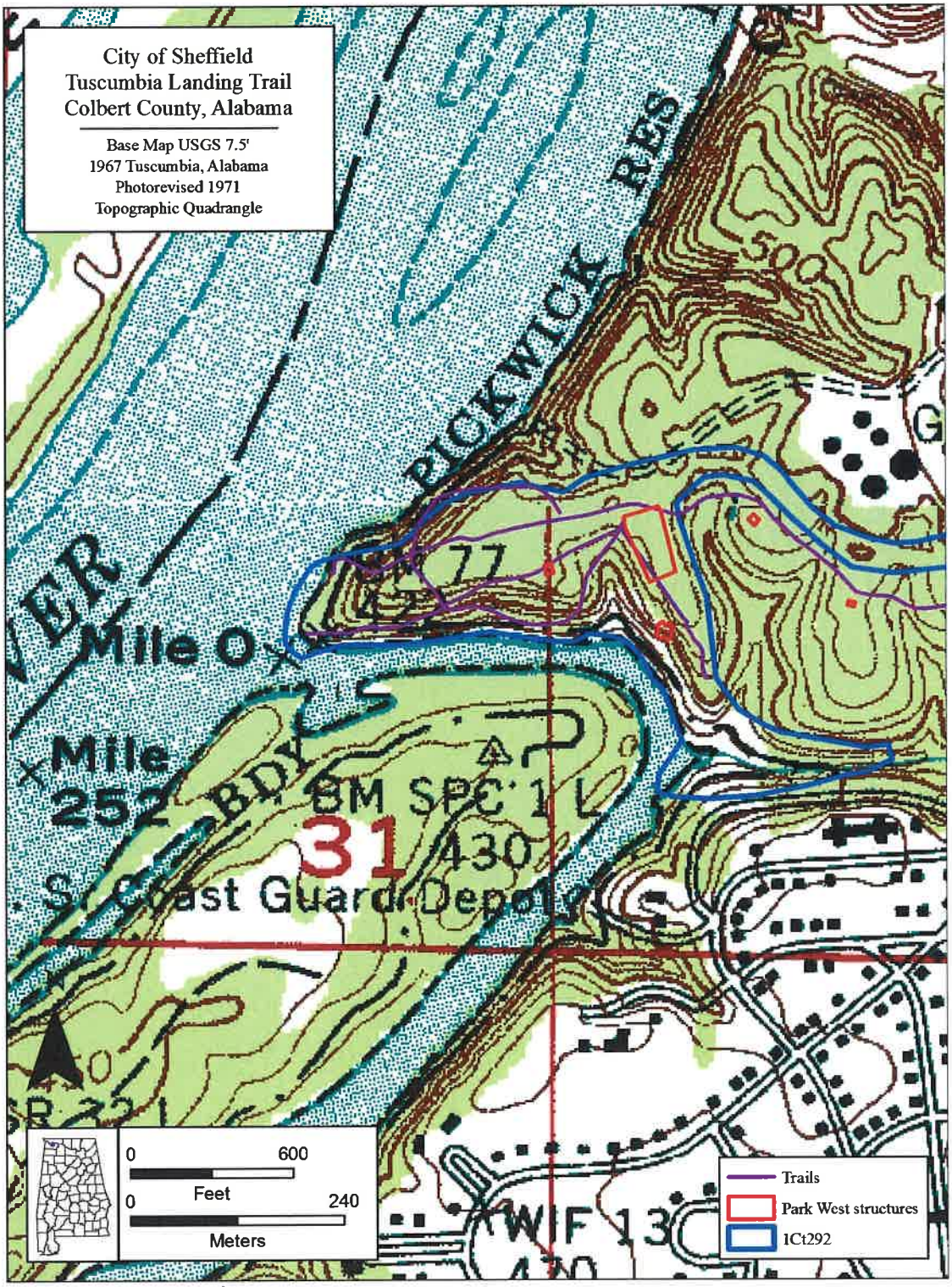

Figure 1. Overview of APE

The APE consists of a western end of a promontory ridge above the Tennessee River on the left descending bank with elevation ranging from a peak of 145 m (475 ft) AMSL along a rise between the remains of two nitrate plant buildings, to a low of 125 m (410 ft) AMSL along the Tennessee River shoreline. The APE has previously been impacted by several historic and modern building episodes and events. The first was the early nineteenth century development of Tuscumbia Landing that added a clay cap to the stabilize the shoreline during flooding events, quarried the tip of the landform for limestone building material, artificially leveled locations for between nine and eleven buildings for the historic steamboat landing, and created berms for the TC&D railroad terminus (Figures 2-7). During the Civil War (1861-1865), Union troops occupied the landing and burned the buildings before retreating in 1862 (Figure 8). Later in 1864, the area was shelled to destroy a Confederate artillery battery on the ridge (Figure 9). The landing was used to a lesser extent after the Civil War, and was abandoned in the 1880s when a new landing was built upstream. The site was reoccupied in the late 1910s by experimental ammonium nitrate crystallization buildings as part of the construction of Nitrate Plant No. 1 to supply explosives for the World War I (WWI) effort (Figures 10-12). The core of the experimental nitrate facility was to the northeast of Tuscumbia Landing. However, the most dangerous portion of nitrate processing, the crystallization buildings were located adjacent to the landing. They were set at a distance from the rest of the plant so that in the event of an explosion the majority of the buildings would be spared. The associated industrial construction heavily modified the crest of the ridge and a more robust railroad berm was constructed leading to the rest of the plant. In modern times, the APE and its immediate environs were further impacted by the development of George H. Carter Junior Park West, a municipal recreational park that added an two asphalt parking lots, an asphalt road, several pavilions, two long barbecues, and a trail system to the east of Tuscumbia Landing (Figures 13-18). Vegetation consists of secondary growth pine and hardwood, privet hedge, and greenbrier (Figures 19-20).

The APE lies within the Tennessee Valley district of the Highland Rim physiographic section of Alabama. The Tennessee Valley district is described as a "plateau of moderate relief with elevations ranging from 600 to 800 ft (183 to 244 m). Chert belt in north, limestone plain along river." (Sapp and Emplaincourt 1975).

The National Cooperative Soil Survey (Natural Resources Conservation Service, Soil Survey Staff 2017) Colbert County, Alabama shows two soil types/associations present within the survey area (Figure 21). A brief description of each soil, along with a representative soil profile follows (Bowen 1994).

> ***FaD—Fullerton cherty silt loam, 6 to 15 percent slopes.*** This gently to strongly sloping, very deep, well-drained soil is found on ridges and side slopes. Individual areas range from 3 to more than 40 aces in size and are irregular in shape. Typical soil profiles consist of up to 6 inches of a brown cherty silt loam underlain by a red cherty silty clay to 19 inches and a red cherty clay subsoil up to 75 inches or more. These soils are of moderate permeability, very strongly acid or strongly acid, and of low natural fertility.
>
> ***FbF—Fullerton-Bodine complex, 15 to 45 percent slopes.*** This very deep, well drained to excessively drained soil is found on very steep side slopes. Individual areas range from 20 to more than 20 aces in size and are irregular in shape. This map unit consists of about 45 percent of Fullerton soil and 35 percent Bodine soil. Typical soil profiles of Fullerton soils consist of up to 6 inches of a brown cherty silt loam underlain by a red cherty silty clay to 19 inches and a red cherty clay subsoil up to 75 inches or more. These soils are of moderate permeability, very strongly acid or strongly acid, and of low natural fertility. Typical soil profiles of Bodine soils consist of a dark grayish-brown cherty silt loam about 3 inches thick underlain by a yellowish-red very cherty silt loam subsoil up to 31 inches and a strong brown extremely cherty silty clay loam up to 75 inches or more. Bodine soils are of moderately rapid permeability, extremely acid to strongly acid, and of low natural fertility.

Figure 2. Stacked stone foundations of Structure 3. View northwest.

Figure 3. Structure 8 location on TC&D Railroad berm terminus. View northwest.

Figure 4. Structure 5 leveled area. View west.

Figure 5. Quarry area at the rear of the landing near the shoreline. View south.

Figure 6. Tuscumbia Landing looking toward Site 1Ct189, the possible location of Coldwater Town. View southwest.

Figure 7. TC&D Railroad line between berms going toward the former location of the depot. View west.

Figure 8. Shovel Test 38 revealing charcoal, heat damaged brick, and cut nails next to the location of Structure 9.

Figure 9. Depression near Structures 8 and 9 that was potentially left by a shell fired by Union guns in 1864. View west.

Figure 10. Concrete foundations of an Ammonium nitrate crystallization building from Nitrate Plant No. 1. View southeast.

Figure 11. Tiled concrete foundations of Nitrate Plant No. 1 shower stalls. View east.

Figure 12. Walking path that ran from the parking lot to the decagonal water intake building to the south and was parallel to the possible wagon trail remnant. View north.

Figure 13. Level area where remote sensing revealed a possible structure, where shovel testing indicated a Late Woodland occupation, and where the wagon trail remnant runs along the ridge. View southeast.

Figure 14. Primary Park West parking lot. View north.

Figure 15. Large overlook pavilion on southern ridge of Park West south of the parking lot. View west.

Figure 16. Abandoned Park West restrooms. View southeast.

Figure 17. Long mortared stone and brick Park West barbeque. View south.

Figure 18. Dilapidated Park West trail bridge. View west.

Figure 19. West wall of the eastern Ammonium nitrate building concrete foundation overtaken by privet, grapevine, and greenbrier. View east.

Figure 20. Typical upper slope vegetation including privet, young hardwood trees, and greenbrier. View east.

General Historical Background

The history of human occupation of northern Alabama along the Tennessee River extends from nearly 11,500 B.C. to the present and figured prominently in the way that archaeologists understand the Paleoindian, Archaic, Woodland, and Mississippian stages, along with the early contact, protohistoric, and colonial periods. In fact, the longevity of occupation and the variation in the sites surrounding the study area are highlighted in the extensive research that has been conducted in the nearby Seven Mile Island Archaeological District, the Pickwick Reservoir, and, more recently, Tuscumbia Landing (King, Marshall, Smith, and Wren 2009; King, King, Marshall, and Smith 2009; Stanyard, et al 2005, 2006; Meyer 1995; Walthall 1980; Waselkov and Morgan 1983; Webb and DeJarnette 1942, 1948). As a result, the prehistoric cultural chronology of northern Alabama and the prehistoric sites adjacent to the APE have been expertly and thoroughly summarize in various publications (Claassen 1996; DeJarnette 1938a, 1938b, 1938c, 1939a, 1939b, 1939c, 1940a, 1940b, 1940c, 1941, 1942; Dye and Galm 1986; Fay 1987; Futato 1986, 2002; Lewis and Kneberg 1959; McKenzie 1965; Meeks 1999; Miller 1950; Moore 1915; Peebles 1971; Romfh 1970; Snow 1940; Walthall 1980, 1981; Warren 2004; Webb and DeJarnette 1942, 1948). However, as the relevant cultural chronology for the study area focuses entirely on the historic and modern history of the area, extending from the early European occupation of the area to the early twentieth century, the prehistoric cultural chronology will be necessarily brief.

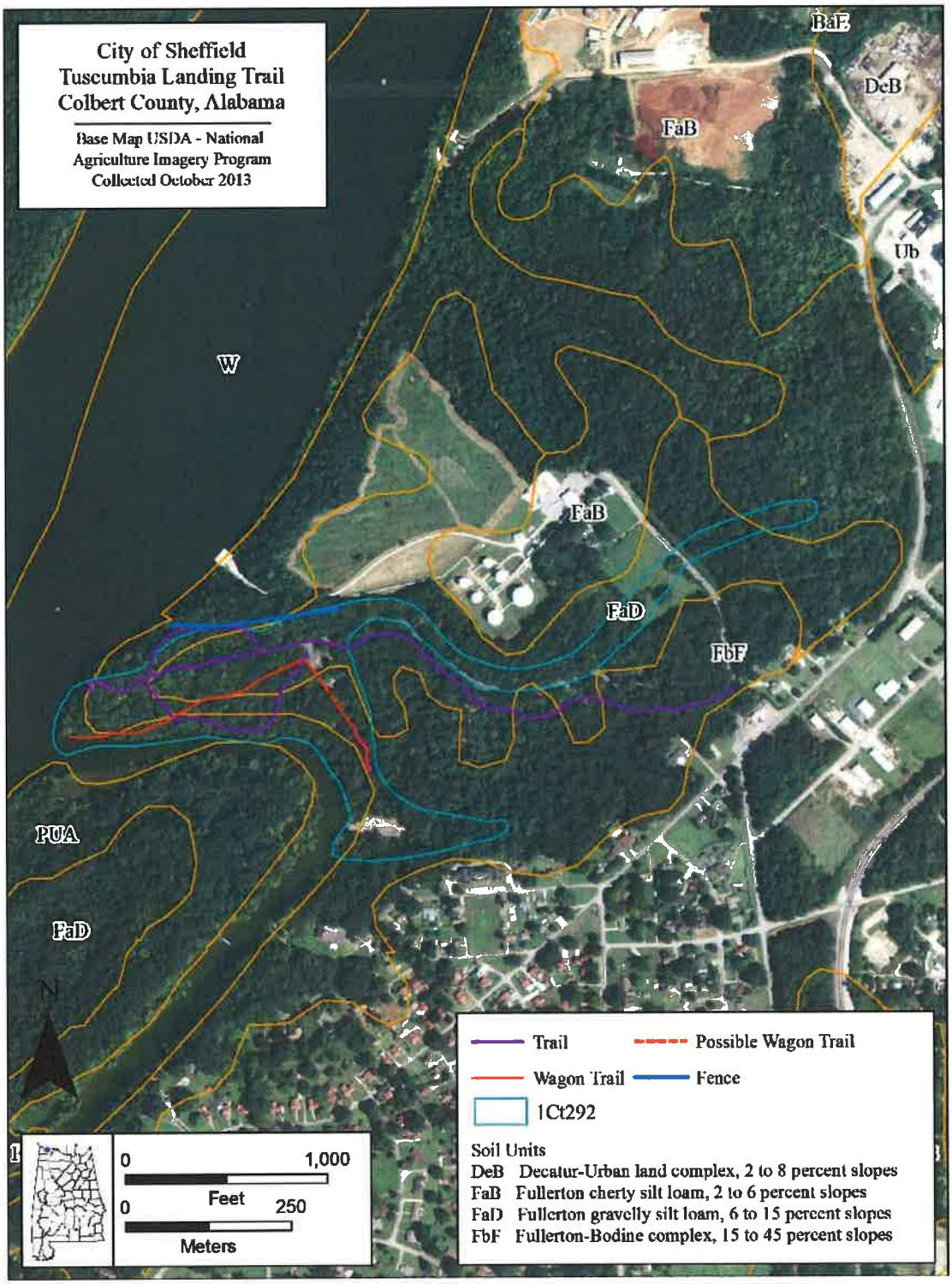

Figure 21. Soil map of the APE.

Paleoindian Stage (11,500 B.C. – 8,500 B.C.)

The earliest people to occupy the region were small, highly mobile bands of hunter-gatherers. These were exceedingly adaptive groups capable of a sustained nomadic lifestyle that centered on the exploitation of a variety of environments and resources. While the traditional interpretive models utilized by archaeologists have emphasized the "big-game hunter" perception with a reliance on mega-fauna, we are now becoming more aware of their dependence on a wide range of small animals and plant foods (Chapman 1994; Fagan 2004; Hollenbach 2004; McNutt et al. 1975; Walthall 1980).

During the Paleoindian stage, sea levels were meters below their current elevations. In the Gulf Coastal region and Atlantic Seaboard, where terrain is relatively level, elevation variation is minimal, and subsidence of former headlands is known, the continental shelf is miles from current shorelines. The lower sea levels would have provided for the exposure of massive tracts of land, now identified as submerged near shore facies.

Several sites in coastal areas have been found in inundated contexts, such as Little Salt Springs and the *Bison antiquus* kill site in the Wacissa River in Florida (Anderson et al. 1996; Walker 2000; Webb et al. 1984). These sites provide direct evidence for interaction of Pleistocene fauna and Paleoindian peoples within areas now underwater. However, the perception of the early occupants of the Midsouth as subsisting on mega-fauna is highly improbable. Mammoths, the more prevalent mastodon, and giant ground sloth were present in the region, but a diet based on the consumption of these large mammals is unlikely (Chapman 1994; Fagan 2004).

At the end of the Pleistocene, vegetation throughout the Midsouth was shifting from patchy boreal forest/parkland environments to mesic oak-hickory forests believed to have been firmly established by about 8,000 B.C. (Anderson and O'Steen 1992; Anderson et al. 1996). These environments would have provided a much more diverse resource base than that available in the previous 13,000 years. Throughout most of the eastern United States, Paleoindian occupations are limited to scattered sites, generally identified by isolated, fluted-point surface finds. Changing hydrologic regimes associated with the glacial retreat and increased precipitation at the end of the Pleistocene probably destroyed and deeply buried many of the Paleoindian sites along river valleys. Deeply buried sites on the Cumberland River, such as the Johnson-Hawkins site (40DV313) near Nashville and the Puckett site (40SW228) in north-central Tennessee, tend to corroborate this suggestion (Broster and Norton 1996).

The most common diagnostic artifacts of the Paleoindian stage are the lanceolate-shaped or auriculate, fluted and unfluted, basally ground, points such as Clovis, Cumberland, and Redstone types. The Paleoindian tool kit also includes some bifacial and unifacial tools that have been found in association with Clovis projectile points (Williams 1957). Waselkov and Morgan (1983) report upwards of 11 sites with a Paleoindian occupation, although reports of fluted project points in the Seven Mile Island Archaeological District are largely based on collector's information.

The Paleoindian stage is broken into three, often arbitrarily assigned, periods, Early (circa 10,500 B.C. to 8,900 B.C.), Middle (circa 8,900 B.C. to 8,500 B.C.), and Late (circa 8,500 B.C. to 8,000 B.C.) (Anderson et al. 1996). Environmentally, the stage marks the end of the Late Glacial era when sea levels were rising and the Gulf shoreline was transgressing towards its present position.

Paleoindian occupations in the Middle Tennessee River Valley tend to be relatively small and scattered. Noting this, Walthall (1980), among others (Anderson and Sassaman 1992; Cable 1996; Johnson 1992; Kelly and Todd 1988), speculates a pattern of nomadism requiring frequent relocation, facilitating a hunting and foraging economy. Low population density, evidenced ar-

chaeologically by sparse surface scatters, would have resulted from the sparse settlement patterns of the nomadic groups. Kelly and Todd (1988) suggest a lifeway dependent upon hunting with a high degree of residential mobility (Meeks 1997).

Futato (1982) suggests a slightly different settlement pattern based on seasonal movement between upland and lowland areas. Anderson et al. (1996) leans towards yet another model that would hold closely with Kelly and Todd's (1988), except that once these highly mobile groups entered a new area extremely rich in resources, they would have quickly adapted procurement strategies coordinating staging areas within their often extensive territories. The majority of current models (Anderson and Hanson 1988; Anderson et al. 1996) tend to support drainage-based settlement patterns, where band-level groups moved relatively freely up and down a given drainage exploiting certain subsistence resources. These movements likely included only seasonal or limited macroband aggregations facilitating breeding and thus social networks. Daniel (2001:258) suggests that in addition to subsistence resources, lithic resources served as a primary factor in settlement patterns during the Late Pleistocene, promoting not only intra-drainage movement but also cross-drainage interaction within an "aggregation range." O'Steen (1996) also suggests that the availability of stone raw material played a major role in the movement of individuals within and across drainage basins. This is evidenced in the Middle Tennessee Valley by the preference for blue gray Fort Payne chert above any locally available source.

The occurrences of sites exhibiting fluted points made of exotic raw materials suggest that Paleoindian groups were highly mobile and had large territories or range sizes. These groups incorporated lithic raw material sources in their seasonal rounds and maintained a curated tool kit while away from the source areas.

For the Early Paleoindian period, several types of Clovis sites have been identified, including small camps or habitation sites, quarries, kills, and larger aggregation sites. The difference between the Early, Middle, and Late Paleoindian can be seen artifactually in the shift from Clovis, to Redstone and Cumberland, to Quad and Beaver Lake, and to the transitional Dalton point types, respectively. Over time, the raw materials utilized for these projectile points gradually shifted from predominantly non-local cherts to a greater dependence on locally available stone resources. The increased number of sites associated with Dalton, and even later side-notched points, suggests an increase in population density and potential societal constraints on access to some of the earlier, preferred raw material sources, or possibly an increasing familiarity with the locally available resources.

Paleoindian occupation of the Middle Tennessee River drainage has resulted in one of the densest concentrations of Paleoindian artifacts in North America (Futato 1996). However, the problem facing our understanding of these occupations is the limited number of controlled excavations of intact sites. The majority of Early Paleoindian period sites are open air occupations identified within plowed and subsequently deflated fields, such as the Belle Mina site, or along eroded shorelines, such as the Quad site. Only at certain sites, namely bluff shelters and caves such as Stanfield Worley, Flint Creek Rock Shelter, Cave Springs, Russell Cave, and Dust Cave, have intact deposits been encountered (Cambron and Waters 1959, 1961; DeJarnette et al. 1962; Driskell 1994; Goldman-Finn 1994; Walker 2000). Occupation of these sites dates to the transition between the end of the Late Paleoindian and subsequent Early Archaic, namely the Dalton horizon.

Archaic Stage (8,500 B.C.-900 B.C.)

The Archaic stage is marked by a shift in material culture, undoubtedly associated with changes in the ecological setting of the region. With the end of the Pleistocene, the last of the North American megafauna reached extinction. The forest environment north of 33 degrees latitude shifted to mixed hardwoods of the mesic forest (Anderson and O'Steen 1992; Anderson et al. 1996).

The result was a shift in exploitable faunal and floral resources. Faunal remains from Stanfield-Worley bluff shelter and Russell Cave indicate white-tailed deer and turkey were the two major sources of meat. Squirrel remains were the most common species identified, with raccoon and box turtle rounding out the list of the most commonly found animal remains (Chapman 1985; Futato 1983; Parmalee 1962; Weigel et al. 1974).

Hickory nuts and acorns were the most common plant remains from these sites. The changes in available food resources were reflected by shifts in material culture and settlement patterns. A slightly more sedentary lifestyle is evidenced in the archaeological record by larger, more densely occupied sites. The Archaic stage has been divided into three periods: Early (circa 8,500 B.C.–6,000 B.C.), Middle (circa 6,000 B.C.–4,000 B.C.), and Late (circa 4,000 B.C.–1,000 B.C.).

Early Archaic Period

The Early Archaic period coincides with the initiation of the Holocene epoch in the Southeast. Differing, sometimes imperceptibly, from Late Paleoindian period occupation trends, the seasonal dichotomy model has been promoted for much of the middle and lower Southeast. Anderson and Hanson (1988) elaborate on this model suggesting that social organization included band and macroband-level social systems. At the band level, groups of roughly 50 to 150 individuals would have been responsible for seasonal movements within a single drainage basin with some migration into portions of surrounding drainages. At selected seasonal intervals, gatherings of 500 to 1,500 people would have occurred, facilitating mating networks and economic and social interaction (Anderson 1996).

Early Archaic occupation within the Middle Tennessee River Valley continues to suggest a concentration of prehistoric peoples following the end of the Pleistocene. A pattern of occupation, similar to that suggested by Futato (1982) and Hubbert (1989) for the Paleoindian stage, is also suggested for the Early Archaic period. This pattern, based on seasonal habitation of upland and lowland areas, would have mirrored the seasonal availability of exploitable resources. These changes can be identified in the number of sites in both riverine and upland contexts and the density of artifacts. The chronological organization of data from Archaic complexes is the result of excavations of buried deposits in cave and rockshelter sites (DeJarnette et al. 1962; Driskell 1992, 1994; Griffin 1974), well stratified open air sites predominantly situated in riverine environments (Cable 1996; Chapman 1977; Davis 1990; Lewis and Lewis 1961), and surface collections from throughout the Southeast.

Evidence for the Early Archaic diet shows wide variability evidenced by the range of stone implements and faunal and ethnobotanical remains recovered from these sites. Grinding stones, butchering, and hide-working tools suggest a diversified subsistence pattern that included deer, bear, turkey, raccoon, squirrel, and opossum. Faunal remains from Dust Cave indicate a shift from a Late Paleoindian exploitation pattern heavy on the hunting of avifauna, including passenger pigeon and waterfowl, to a greater reliance on fish and terrestrial mammals during the Early Archaic (Walker 2000). Hickory nuts, acorns, and other nuts were increasingly exploited throughout the period as well (Chapman 1994; Yarnell and Black 1985). Hollenbach (2004, 2005a, 2005b) completed ethnobotanical analysis of five sites in northwest Alabama. Her examination of the transition between Late Paleoindian and Early Archaic shows relatively little change in the plant foods utilized from one period to the next. Instead, she has highlighted the use of certain sites within different environments for specialized resource acquisition, including acorn, hickory, hazel, chestnut, and various fruits and seeds. The diagnostic artifacts for the Early Archaic include Kirk Corner Notched, Decatur, St. Albans Side Notched, LeCroy Bifurcated Stemmed, and Kanawha Stemmed projectile points. Pitted cobbles, unifacial (thumbnail) scrapers, and drills are also frequently associated with Early Archaic components (Chapman 1994).

Middle Archaic Period

The Middle Archaic period (6,500 B.C.-3,000 B.C.) in the Middle Tennessee River Valley coincided with the Mid-Holocene, Hypsithermal or Altithermal Interval, a time of warmer temperatures and drier conditions in the mid-continent. The Hypsithermal (approximately 6,000 B.C.-2,000 B.C.) considerably altered the environment and likely influenced the settlement and procurement strategies of people living in the region. It was during the Middle Archaic that the massive shell middens along the middle Tennessee River began to appear.

By 4,000 B.C., major environmental changes had taken place across the Southeast. The effects of the Hypsithermal are noted from pollen data collected in St. Clair County, Alabama; Georgia; Coastal Alabama; and the Tennessee River Valley. The oak-hickory, mixed hardwood, and mixed-oak hickory and southern pine forests were firmly developed across the area (Delcourt et al. 1983). Even with the changing environment, increased populations evidenced by site density, suggest increased settlement pressures resulting in greater social stress factors. Walthall (1980) suggests an increase in territorialism and provincial diversity as environments evolved into modern regional patterns.

Atlatl weights appeared for the first time and gave conclusive evidence for the use of the atlatl or spear thrower. In addition, stone net sinkers have been found in the archaeological record and suggest new technologies for fishing (Chapman 1977; Davis 1990). The use of arboreal seed crops remains consistent with that of the Early Archaic period, with preserved walnuts often recovered in the botanical record (Chapman 1977; Lewis and Lewis 1961).

Middle Archaic diagnostic projectile points are the Kirk Stemmed, Stanly Stemmed, Morrow Mountain, Halifax Side Notched, Benton, and Sykes/White Springs types (Chapman 1994; Davis 1990; Kimball 1985; Kneberg 1957; Meeks 2000). Container technology includes the advent of stone bowls, often found great distances from the raw material sources. Most of these vessels are made of soapstone, a metamorphic talc found in the eastern face of the Appalachians, particularly in the Piedmont areas of Tennessee, North Carolina, Georgia, and Alabama (Webb and DeJarnette 1942; Wells 2006). Concentrations of steatite bowls in the archaeological record occur as far away as Louisiana and southern Florida (Sassaman 1993; Truncer 2004). The long transport required underscores the importance of extensive trade networks that appeared during the Middle Archaic. These large interaction spheres are also highlighted by the similarity in ceremonialism over broad areas. Complex mortuary practices involving specialized grave goods such as the large, finely chipped Benton point and blade caches found with burials of the Benton Mortuary Complex; the presence of red ochre; and other "killed" artifacts, such as burned bifaces, found with human interments show similar belief systems integrated into the archaeological record of sites across the Midsouth (Futato 1983; Meeks 2000).

For the portion of the Middle Tennessee Valley that includes much of Pickwick and lower Wilson Lakes, the Seven Mile Island phase (Futato 1983) has been defined. Futato (1983) originally subsumed this phase under the Late Archaic period, but it was later pushed back to the Middle Archaic when the date range for Seven Mile Island phase components was found to be between 4,500 B.C. and 3,600 B.C. (Driskell 1994). Diagnostic artifacts for the Seven Mile Island phase include Benton and Sykes/White Springs cluster projectile points (Meeks 1994). The phase is likely related to the Walnut phase in the upper Tombigbee River drainage where Benton points were also collected (Bense 1983; Futato 1983).

Late Archaic Period

The Late Archaic period (3,000 B.C.-900 B.C.) was a time of a rapid population increase resulting in larger and more numerous sites. Chapman (1985:150) refers to Late Archaic sites as

"widespread and frequent." Sites interpreted as single-family occupations along the first river terraces are manifested by rock-filled firepits. Larger, multi-family sites, represented by a denser pattern of these firepits, suggest these sites were established on a relatively long-term basis (Chapman 1994). By the beginning of the Late Archaic, modern climatic conditions were well established. The period is marked by a continued increase in population and evidence for social institutions, more stable settlement patterns, and increased trade interaction. Evidence for increased sedentism is noted by larger sites, such as shell middens with denser occupation deposits (Futato and Solis 1983). Social institutions and ceremonialism are noted with the appearance of monumental architecture in portions of the Southeast and the inclusion of grave goods. The increase in non-local artifacts at large sites hints at regional interaction and trade of material goods.

It is during this time that exploitation of environments became even more specialized with large shell middens appearing along many of the major rivers and increasing harvest of white tailed deer. Hickory nuts continued to dominate the plant remains of Late Archaic sites, but a gradual shift is noted throughout much of the Midsouth and Southeast. Large storage pits filled with nut shells are known from terminal Archaic sites in the Tennessee Valley and Highland Rim (Bentz 1996; Crites 1996; Futato 1983; Oakley 1975). Again, hickory nut dominates the plant remains found in these pits. However, plant remains from the Tennessee Valley, the Cumberland Plateau in eastern Kentucky, and the Coastal Plain suggest that by the Late Archaic the cultivation of at least some seed crops, including sunflower, maygrass, chenopod, and gourd, namely *Cucurbita*, had occurred (Chapman and Shea 1981; Chapman et al. 1982; Chapman and Watson 1993; Gremillion 1996, 2004; Yarnell 1993; Yarnell and Black 1985). Besides stone vessels and projectile points, stone tool technology of the Late Archaic also included grooved axes and limestone digging implements. Long distance trade is seen in the archaeological record by the presence of non-local artifacts, such as marine shell, copper, and greenstone (Chapman 1994; Lewis and Kneberg 1958).

In the Middle Tennessee Valley, several relatively large, stemmed, hafted, biface types, including Ledbetter, Wade, and Little Bear Creek (Cambron and Hulse 1975; Futato 1983; Little et al. 1997), serve as hallmarks of the Late Archaic material culture. They also serve as markers for the Ledbetter horizon (3,000 B.C.-1,000 B.C.), the Little Bear Creek horizon (2,000 B.C.-1,000 B.C.), and the Wade horizon (1,700 B.C.-1,000 B.C.). Typical Ledbetter horizon diagnostics include Ledbetter, Pickwick, Mulberry Creek, and Maples points. The Little Bear Creek horizon is marked by the presence of Little Bear Creek points. The terminal Late Archaic period, Wade horizon is typified by Wade, Limestone, and Cotaco Creek points. In southcentral Tennessee and northern Alabama, the Lauderdale culture has been loosely defined by Walthall (1980) and discussed by Krause (1988). Oakley and Futato (1975) defined the Perry phase as the last preceramic phase of the Late Archaic period. The phase is named for the Perry site (1Lu25) on the east end of Seven Mile Island on Pickwick Lake and is characterized by Little Bear Creek and Flint Creek projectile points. The end of the phase is marked by the appearance of the Wheeler series ceramics in the Pickwick Lake area.

Potential influence from the Poverty Point culture has been suggested for portions of the Middle Tennessee Valley. The presence of steatite vessels within the Wheeler Basin, far from the source area of the raw material in the Piedmont, and the distribution of sandstone bowls likely manufactured in the Basin and distributed as far west as Poverty Point, have been associated with extensive trade networks that spanned the area from western Georgia to northeast Louisiana (Ford and Webb 1956; Newman and Berryman 2003; Sassaman 1993; Wells 2006).

The Late Archaic period marks the end of the Archaic stage and the preceramic occupation of the Southeast. By the end of the Archaic, the environment had again shifted. The Late Holocene environment had fluctuated throughout the Archaic and by the terminal Late Archaic had reached a warmer and wetter trend. Populations within the middle Tennessee River Valley were on the rise, with previously avoided areas being newly occupied and the number of sites identified with Late

Archaic components showing a marked increase from the previous periods (Chapman 1994; Meeks 2003).

Gulf Formational Stage (2,500 B.C.-100 B.C.)

The Gulf Formational stage is geographically limited to the Atlantic Coastal Plain of South Carolina, Georgia, and Florida, and the Gulf Coast states of Alabama, Mississippi, and Louisiana. This stage has also been recognized as far north as west Tennessee. The hallmark for the stage is the appearance of early fiber and sand-tempered pottery, the earliest of which appears to be the fiber-tempered, Stallings series from the Savannah River drainage (Sassaman 1993). Walthall and Jenkins (1976) argue that the appearance of fiber-tempered ceramics originated in the east and moved west over time. Rather than follow the trend of referring to the appearance of ceramics as marking the Woodland stage (Griffin 1952; Hudson 1976), they proposed the term Gulf Formational to differentiate the early fiber-tempered vessels and subsequent sand-tempered wares of the Gulf Coast region from slightly later ceramic traditions from nearby areas (Jenkins et al. 1986; Walthall 1980).

Middle Gulf Formational Period

The Gulf Formational stage is divided into the Early (circa 2,500 B.C.-1,200 B.C.), Middle (circa 1,200 B.C.-500 B.C.), and Late (circa 500 B.C.-100 B.C.) periods. The Early Gulf Formational period occurs along the Atlantic coast and likely began with the Stallings Island pottery (Walthall and Jenkins 1976; Sassaman 1993). In the western Middle Tennessee Valley, the earliest pottery is found in the Pickwick Basin during the Middle Gulf Formational period. The fiber-tempered Wheeler pottery of the Bluff Creek phase appears first in the western portion of the Basin and moves out towards the Wheeler and Guntersville Basins. The lithic technology associated with the Bluff Creek phase includes the typical Late Archaic point types of Little Bear Creek, Wade, and Cotaco Creek.

Late Gulf Formational Period

The Late Gulf Formational period is differentiated based on the appearance of sand-tempered pottery. The sand-tempered Alexander ceramics of the Hardin phase occur throughout the Tennessee River Valley. Graham (1966) reports Alexander ceramics from several sites within the H. Neely Henry Lake area in the Coosa drainage to the southeast and O'Hear (1990) has identified Alexander pottery throughout the upper Tombigbee drainage to the west. Rather than include Alexander in the Late Gulf Formational, Knight (1998) incorporates these pottery types within the Early Woodland. His logic is based on the fact that the Gulf Formational stage does not represent a drastic change in prehistoric economics, but rather an early pottery tradition. Since no other pottery tradition is given the status of marking the change of stages, he suggests that the Gulf Formational should be subsumed into the Woodland stage.

Dye (1980) assigned the Hardin phase to the Late Gulf Formational occupations of the western Middle Tennessee Valley. An uncalibrated radiocarbon date from the sealed Late Gulf Formational component at the Sakti-Chaha site in Hardin County, Tennessee places the occupation at 400 ± 80 B.C. (Dye and Galm 1986). To the south in the Tombigbee River drainage, Jenkins (1982) identified the Henson Springs phase based on small transitory camps. Further to the east in the Coosa Valley, Walling and Schrader (1983) defined the Dry Branch phase.

Besides the appearance of pottery, Gulf Formational stage occupations are very much consistent with the Late Archaic traditions of the Middle Tennessee Valley. In some instances, fiber-tempered pottery has been found in the same stratified midden context as steatite vessels (Gage et al. 2003), suggesting a temporal and spatial overlap of the different container technologies.

Gulf Formational component sites tend to center around riverine and swampy environments. By the Late Gulf Formational, more permanent occupations are evidenced by the presence of large, often bell shaped, storage pits. These pits were also used for interments of both cremated and flexed burials. The trend towards these types of environments and the presence of large storage pits may correspond with the onset of the Subatlantic period and colder, drier conditions.

Woodland Stage (900 B.C.-A.D. 900)

In the Middle Tennessee Valley, the advent of pottery marks the beginning of the Woodland stage. Tempering agents, surface treatments, and vessel forms serve as temporal indicators throughout the Woodland. Settlement patterns indicated by the archaeological record reveal a more sedentary lifestyle with increased dependence on horticulture. The Woodland is broken into Early (circa 600 B.C.-400 B.C.), Middle (circa 400 B.C.-A.D. 500), and Late (circa A.D. 500-A.D. 900).

Early Woodland Period

The conglomeration of cultural and chronological divisions of the Woodland stage is dependent on regional attributes (Brown 1986). The temporal overlap with the Late Gulf Formational period includes approximately 800 years and a regional boundary that separates the east and west Middle Tennessee Valley occupations. The Late Gulf Formational period Alexander culture of the western Middle Tennessee Valley appears contemporaneous with the Early Woodland period Colbert I phase of the eastern Middle Tennessee Valley (Futato 1998). The artifactual difference between the two is the appearance of limestone-tempered Long Branch Fabric Marked pottery in Colbert I phase assemblages. Interestingly, the Late Gulf Formational/Early Woodland boundary (Futato 1998; Walthall 1980) lies in a similar area to that represented by the Late Archaic steatite and Gulf Formational fiber-tempered pottery (Sassaman 1993). This area is Green Mountain, which is located at the confluence of the Flint and Tennessee Rivers in Madison County, Alabama. The implication is that the ceramic boundary is a direct consequence of a cultural boundary. However, the similarities in some aspects of cultural components from each side of the boundary suggest that this interpretation is much too simplistic to explain the social interactions of the time.

Based on excavations at Camp Creek (Lewis and Kneberg 1957), Phipps Bend (Lafferty 1981), and Site 40RE108 (Schroedl 1990), Woodland subsistence was largely based on white-tailed deer, elk, bear, turkey, raccoon, beaver, and squirrel accompanied by turtles, mollusks, and fish. Nut crops such as acorn, hickory, and walnut were widely exploited. Horticulture was still practiced on a limited basis and some sites produced no cultigens at all (Schroedl 1990).

Middle Woodland Period

Again, larger villages and associated middens, as well as monumental architecture and localized artifact assemblages, point to an increase in sedentism throughout the Southeast. Horticulture had become firmly established with small grains being a major diet component (Yarnell and Black 1985). Pan-regional interaction is evident from the trade items brought from the upper Midwest, Atlantic Coastal region, and the Gulf Coast (Walthall 1980). Cranial deformation, non-local burial goods, and monumental architecture highlight the intricate ceremonialism associated with the Middle Woodland.

The Middle Woodland period in the Middle Tennessee Valley includes an extremely diverse set of pottery types. The diversity highlights the development of local assemblages with extensive regional interaction (Futato 1998). In the eastern portion of the Wheeler Basin, the Colbert II culture assemblage (300 B.C.-100 B.C.) is dominated by Long Branch Fabric Marked pottery with lesser amounts of Wright Check Stamped. Knight (1998) proposed the Green Mountain phase (100 B.C.-A.D. 100) for the area near Hobbs Island. The assemblage includes a majority of Mulberry Creek Plain and lesser amounts of Long Branch Fabric Marked and minor amounts of Pickwick Complicated Stamped and Bluff Creek Simple Stamped (Futato 1998; Heimlich 1952; Knight 1998). The Walling phase (A.D. 100–A.D. 350) followed and includes the most diversified set of types for the period. Mulberry Creek Plain continued as the dominant type, but Flint River Cord Marked became more prevalent with a wide range of other types being found in minor amounts (Knight 1998). The final phase for the region's Middle Woodland period is Bell Hill (A.D. 350-A.D. 500). It is much like Walling in the dominance of Mulberry Creek Plain, but decorated pottery became even less prevalent. In addition, the projectile point types shift from the broad, lanceolate Greeneville cluster and Upper Valley cluster to the Lanceolate Spike cluster (Futato 1983, 1998).

Further to the west in the Pickwick Basin, the initial Middle Woodland occupations are assigned to the end of the Colbert horizon (400 B.C.-100 B.C.). The differences between it and the slightly later assemblages in the Wheeler Basin are distinguished by the inclusion of Mulberry Creek Plain and the presence of Long Branch Fabric Marked as the dominant pottery types (Futato 1983, 1998; Jenkins 1981; Jenkins and Krause 1986).

The Colbert II culture and the overall Middle Woodland period in the Middle Tennessee Valley correspond with the Copena Mortuary Complex extending from the Pickwick Basin in the west to Guntersville Basin in the east (Cole 1981). Copena was coined by Webb (1939) to refer to a focus of the Hopewellian phase in which burials were often accompanied by copper and galena artifacts. These burials appear in caves and mound contexts throughout the Middle Tennessee Valley.

Late Woodland Period

The Late Woodland in the Middle Tennessee Valley is divided into two phases: the end of the McKelvey I phase and McKelvey II phase, and the Flint River culture, a single culture isolated to the eastern portion of the Wheeler Basin. Again, the McKelvey I and II phases are marked by the appearance of grog (clay-grit)-tempered Baytown Plain, *var. McKelvey* ceramics, and include relatively large proportions of Mulberry Creek Cord Marked (Futato 1998; Knight 1990). McKelvey II assemblages are virtually identical to those of Miller III in the Tombigbee drainage. The Flint River culture's ceramic assemblage is dominated by Mulberry Creek Plain and Flint River Brushed. Diagnostic lithic artifacts from the Late Woodland include a shift to smaller projectile points such as Hamilton and Madison. To the west, Late Woodland occupations are assigned to McKelvey I (Walthall 1980). This phase includes McKelvey Plain and Wright Check Stamped ceramics, both of which are grog tempered. In recent years McKelvey Plain has come to be identified as Baytown Plain, *var. McKelvey* (Futato 1998), as the type is virtually indistinguishable from Baytown Plain. Its identification, as compared to Baytown Plain, is limited to north Alabama and the Tennessee Valley.

Settlement patterns continued to focus on riverine habitation sites with permanent villages located along rivers and creeks (Johannessen 1993). Upland sites are dominated by temporary hunting camps (Walthall 1980). Much emphasis has been placed on shellfish procurement during the Woodland stage (Peacock 2002), in particular during the end of the Middle and beginning of the Late Woodland. In the Middle Tennessee Valley, the number of sites with both Middle and Late Woodland components suggests a continuity of existing lifeways. However, an increase in single-

component, Late Woodland sites in different environmental contexts points to a potential diversification of the resource base. Moreover, the environmental changes that occurred during the Late Woodland, corresponding to the cooling trend of the Dark Ages Cold Period (Meeks 2003), support the need for the ever increasing Late Woodland population to seek new food sources and broaden their subsistence base.

Mississippian Stage (A.D. 900-A.D. 1600)

The Mississippian stage is marked by a distinct shift in political, social, and general cultural conditions in the Southeast. The foundation for Mississippian society is believed to have its source in the Mississippi Valley, but quickly spread east and incorporated local variations. Walthall (1980) provides a summary of the Mississippian stage for Alabama and portions of the surrounding region. Pottery with shell tempering appeared; small, triangular points (Hamilton and Madison types) were prevalent; and floodplain horticulture centered on the triad of maize, beans, and squash was practiced. The construction of massive ceremonial centers, such as Cahokia and Moundville, occurred, and ceremonialism incorporating aspects of horticulturalism was practiced. As with the preceding stages, the Mississippian is divided into Early (roughly A.D. 900-A.D. 1100), Middle (roughly A.D. 1100-A.D. 1400), and Late (roughly A.D. 1400-A.D. 1600) periods, each with a variety of regional phases.

Early Mississippian Period

In the Middle Tennessee Valley, the only Early Mississippian components are assigned to the Langston phase. Defined for sites in Guntersville Basin (Krause 1988; Walthall 1980), but having a few recently recognized components as far west as the Pickwick Basin (Futato 1998), the phase is identified by the presence of shell-tempered, plain vessels (Mississippi Plain) often with loop or narrow strap handles, as well as the salt pan wares of Kimmswick Fabric Impressed, *var. Langston* (Futato 1998; Knight 1990). Langston phase sites have been found on high ground and include mounds and associated villages with both single-set post and wall trench with open corner structures. A stockade, complete with protected entry way and bastions was also present at the Gunters Landing site. Inside the stockade was a large, multi-construction episode, temple mound (Walthall 1980).

The interaction of the Langston phase inhabitants of the Middle Tennessee Valley with the Hiwassee Island phase of eastern Tennessee is highlighted by the presence of Hiwassee Island Complicated Stamped and Hiwassee Island Red-on-Buff. Indications of contact with Moundville include Moundville Incised and Bell Plain, *var. Hale* (Futato 1998).

Middle (Mature) to Late Mississippian Periods

In the Middle Tennessee Valley, the Mature Mississippian refers to both the Middle (A.D. 1200-A.D. 1400) and Late (A.D. 1400-A.D. 1550) Mississippian defined in the Upper Tennessee River Valley, as the two have yet to be distinguished (Futato 1998; Walthall 1980). Mississippian mound sites dot the landscape of the Middle Tennessee Valley, and three phases are now recognized for the Mature Mississippian.

The Kogers Island phase includes single-set, post architecture and single or multiple-mound sites with associated villages on islands (Webb and DeJarnette 1942; Walthall 1980). Although identifiable relation to Moundville is evidenced by several common motifs, Walthall (1980) suggests that the Kogers Island phase assemblages reflect a closer tie to the Mississippian groups of the Tennessee Cumberland region.

The Hobbs Island phase (Walthall 1980) is concentrated in the central portion of the Wheeler Basin, from Tick Island in the west, to the Flint River and Painted Bluff in the east (Gage and Marcoux 2004). Similar to the Kogers Island phase of the Pickwick Basin, the Hobbs Island phase is also dominated by Mississippi Plain with lesser amounts of decorated wares including Nashville Negative Painted bottles (Gage and Marcoux 2004). The type site for the phase is Hobbs Island, an island just downstream from the mouth of the Flint River. Excavated by the WPA in the 1930s, the island included two burial mounds, a larger platform mound, and an associated village. Similar sites with platform mounds and/or associated platform mounds appear at other sites including Walling II (1Ma31) (Gage and Marcoux 2004) and Tick Island (1La13). Again, the relationship between the Moundville variant and the Hobbs Island phase is evident in the motifs on several Hobbs Island phase vessels, including Moundville Incised, *var. Snows Bend* and Bell Plain. A single carbon date has been recovered from a Hobbs Island phase site. A date was obtained from a central support post from the Walling II site of cal. A.D. 1070-A.D. 1275.

The Henry Island phase is recognized as the third Mature Mississippian component identified in the Middle Valley. Centered in the Guntersville Basin, the Henry Island phase is distinguished by the presence of large settlements with mounds and small scattered farmsteads, stone box graves, primarily shell tempered plain and incised pottery, and occasional sand tempered wares and vessel forms that tie Henry Island to both the Nashville Basin and the Etowah site in the Coosa Valley to the east. Nashville negative-painted water bottles, large flint blades, shell beads, incised shell gorgets, conch shells, and large copper sheets with repousse designs of zoomorphic and anthropomorphic figures have been found at the sites like Rudder, Sublet Ferry, Hardin, Snodgrass, and Henry Island (Walthall 1980).

Early Contact and the Historic Era

Following the European intrusion into the Americas in 1492, the historic narrative of peoples native to northern Alabama were forever impacted by a series of events that changed the nature of society in the New World. As only a brief narrative can be presented here, the reader is referred to the following cited sources for thorough, and expertly summarized, narratives of specific events taking place within the APE and the surrounding area (King, King, Marshall, and Smith 2009; King, Marshall, Smith, and Wren 2009; Waselkov and Morgan 1983). The post-contact history of the APE will be approached by century, beginning with a period of early contact during the Protohistoric; early exploration and settlement through the seventeenth and eighteenth centuries; Indian Removal, economic development, and the Civil War during the nineteenth century; and continued industrial development during the twentieth century.

Sixteenth Century and Early Exploration

Dramatic shifts occur in regional populations that mark the decline of Mississippian occupation of the western and central portions of the Middle Tennessee Valley by A.D. 1600. To the east in the Ridge and Valley of eastern Tennessee, the shift from the Mississippian to the Historic tribes includes local variability within an overarching regional culture. Ethnographic accounts identify the various tribes, namely the Cherokee in the Ridge and Valley including the Eastern (Upper) Tennessee Valley, the Chickasaw in the Middle and Western Tennessee Valley, and the Upper Creek in the Alabama River Valley (Swanton 1979). The first European incursion into the region was the expedition of Hernando DeSoto in 1539, which was followed twenty years later, in 1559, by an expedition of soldiers dispatched from the Spanish Colony on the Alabama River by Tristan de Luna (Clayton et al. 1993; Hudson 1976; Walthall 1980). While DeSoto's expedition entered the Hiwassee River and worked their way downstream into the Guntersville Basin, de Luna's forces came north through the Coosa Valley and into the eastern portion of the Middle Tennessee Valley (Hudson 1976).

Within the region, the historically documented tribes occupying the Middle Tennessee Valley, the Ridge and Valley, and the Appalachian Summit include the Chickasaw, Creek, Shawnee, Natchez, and Cherokee. In the Pickwick and Wheeler Basins, Chickasaw sites are known as far east as Hobbs Island, originally called Chickasaw Island (Futato 1998; Swanton 1979; Webb 1939). The Chickasaw reportedly were in conflict with the Cherokee, Shawnee, Choctaw, and Creeks over similar territorial disagreements in the region. In fact, even though the hazardous shoals are represented on many early historic maps, the area was not subjected to permanent European settlement until the nineteenth century. Notably, no historic indigenous towns are shown near the shoals during the early European exploration of the area, although the area was certainly inhabited by Native Americans and, and therefore, embroiled in various border skirmishes as increasing numbers of white settlers moved into Tennessee River Valley. The subsequent cessation of native ancestral lands to incoming white settlers occurred throughout the southeast and within all of the extant native tribes, including the Chickasaw, the Cherokee, the Choctaw, and the Creek.

Coldwater and Confrontation

Trading expeditions and intermittent settlement by Spanish, French, English, and then American traders characterized the mid to late eighteenth century in the study area. While there are reports that a French trading post was established on the north side of the shoals between 1713-1715, Waselkov and Morgan (1983) argue that the cost was too great and that no such fortification was ever built. However, even late eighteenth century efforts to establish permanent settlements in the vicinity of the APE were initially quite unsuccessful on account of the extant Creek villages, and references to possible Spanish settlement and incursions from eastern states were also rebuffed by the natives in the area, even up to 1785 (Waselkov and Morgan 1983). Despite repeated attempts to control the shoals, European control proved impossible, in part, because the area was so heavily utilized by the Chickasaw, Choctaw, Cherokee, and Upper Creek as common hunting ground, but also because of skirmishes that broke out between tribes at the end of the eighteenth century (Lowrie and Clarke 1832 as cited in Waselkov and Morgan 1983).

The earliest reference to a historic Indian town in the study area is that of Coldwater, also known as *Oka Kapassa* in the Choctaw-Chickasaw language (Wright 2003). Coldwater was located on the west bank of Coldwater Creek (aka Spring Creek), which is to the southwest of the APE across the confluence of Spring Creek with the Tennessee River. Coldwater was identified as a Cherokee village founded around 1780 as a trading post for native groups, including the Cherokee, Creek, Chickasaw, and Delawares, to engage with nearby settlers and traders, including French traders from the Illinois area (Waselkov and Morgan 1983; Wright 2003). Coldwater was predominantly Creek, although reports indicate that it was inhabited by as many as 50 Creek and Cherokee warriors (King, King, Marshall, and Smith 2009; Waselkov and Morgan 1983) This settlement followed the 1775 Treaty of Sycamore Shoals, which ceded swaths of Cherokee land in Kentucky and eastern Tennessee and resulted in a great migration of Cherokee both south and west led by the Cherokee Dragging Canoe (King, King, Marshall, and Smith 2009; Waselkov and Morgan 1983).

Coldwater entered the historic record in 1787 when Col. James Robertson led 130 militiamen from Nashville to the town in apparent retribution for a series of raids conducted on the settlers on the Cumberland in central Tennessee, which Robertson thought were instigated by French traders at Coldwater. Col. Robertson attacked Coldwater from both the western and eastern side, and village inhabitants were purportedly caught in a dangerous crossfire. Three natives, three French traders, and a white woman were killed in the onslaught, and several traders and their goods were captured (Wright 2003).

The Trail of Tears and Indian Removal

As westward expansion pressed farther into the heartland of Tennessee and Alabama in the early nineteenth century, forcing the westward resettlement of native peoples following various treaties, interaction between federal troops, settlers, and native populations became increasingly tense. Near the Alabama, Coosa, and Tallapoosa Rivers, these tensions culminated in the Creek War of 1813-1814, in which US federal troops, fearing primarily Upper Creek support of the British in the War of 1812, led a foray against the Creek warriors in central and northern Alabama who were fighting for a return to pre-contact lifeways, native independence, denunciation of colonization, and attempts by multiracial tribal leaders to create alliance with European traders and businessmen (Halbert and Ball 1995; Waselkov 2006). During this bloody war, the federal troops were joined by native allies, including both Cherokee and Creek peoples, to fight against a group of the Creek who came to be known as the Red Sticks. Following Creek victories at Burnt Creek and Fort Mims, General Andrew Jackson and John Cocke led a militia to raid Creek villages throughout 1813 and 1814. This bloody war came to a close following the Battle of Horseshoe Bend on March 27, 1814, when the Creek forces were decimated (Halbert and Ball 1995; Waselkov 2006).

Following the conclusion of the Creek war, settlement flourished in the Alabama Territory and the Tennessee River Valley, with the population in Indian-ceded land increasing from only 9,000 to over 127,000 people between 1810 and 1820 (King, King, Marshall, and Smith 2009). In the study area, treaties with the Cherokee and Chickasaw ceded much of the land surrounding the shoals between 1812 and 1817. Following these treaties, land companies began parceling out the area to white settlers and businessmen to encourage settlement in the region.

This early land development also affected the areas surrounding the shoals. While the Creek War of 1813-1814 took place well to the south of the APE, troops and militia passed through the study area as General Jackson and other forces mobilized from Tennessee. In fact, plat maps from 1818 show the purchase of land and the establishment of a town called York Bluff near modern-day Sheffield (Figure 22) (UA Cartographic Research Library 2017). In fact, Section 32, in which is APE is located, was specifically set aside by the US Secretary of War John C. Calhoun. Following Alabama's grant of statehood in 1819, development flourished in nearby Florence and within Franklin County, a predecessor to Colbert County (King, King, Marshall, and Smith 2009). The cities of Tuscumbia and Sheffield were slightly later developments, though, as neither are shown in an 1828 map of North America (Figure 23). Notably, the same map also shows the study area as situated between the Cherokee to the east, the Upper Creek to the south, and the Choctaws to the southwest, with no clearly defined cultural association for the APE. This would seem to confirm that the area was utilized by a broad range of tribes in the nineteenth century.

With the influx of missionaries and Indian agents, who acted on behalf of the federal government, native peoples of the southeast became an integral part of the economic, religious, and social networks that typified eighteenth and nineteenth century America (Thomason and Parker 2003). Native Americans participated in commerce, embodied the broad shift from subsistence farming towards plantation agriculture, became slave owners, and increasingly converted to Christianity in an effort to carve out a new socioeconomic niche and integrate into the growing US social milieu.

The nineteenth century development of the agroeconomy of the southern states based on slave labor and the cultivation of cotton, tobacco, and other crops, however, occurred against a backdrop of the removal of Native Americans from their ancestral lands and subsequent illegal settlement by white settlers throughout the southeast. Following the 1803 Louisiana Purchase, the federal government had seemingly sufficient land to offer in fair trade in exchange for the ancestral lands of native peoples. Support for removal, as opposed to coexistence, became increasingly popular in the 1830s.

Figure 22. 1818 Surveyor's Plat Map showing the APE in the Section 32 and the establishment of York Bluff in brown, northeast of the APE (UA Cartographic Research Library 2017).

Figure 23. Excerpt of W. Hoffman's 1828 "Vereinigte Staaten von Nord America" showing the Tribal Nations documented in the vicinity of the APE, established roads, and the city of Florence. APE shown as red star. (UA Cartographic Research Library 2017).

Although enacted through various legislation, former General Andrew Jackson, a Tennessee native, worked diligently following the War of 1812 and the Creek War of 1813-1814 to craft treaties that promoted Indian Removal at the expense of increasingly factionalized native tribes. More often than not, increased fractionalization led to a confusing, and detrimental situation, in which certain individuals treated with the federal government to cede lands, despite not being a sanctioned or formal leader for a particular native group. Moreover, the diverse interests of treating parties and of tribal nations made it difficult for a single, autocratic leader to speak to the broader interest of a tribal nation.

This push towards removal followed a longstanding tradition in the nineteenth century in which treaty rights, boundaries, and limits were rarely enforced, and payments failed to equal the true value of ceded lands (Thomason and Parker 2003). For example, a Treaty of 1817 signed by the Cherokee recognized the right of Cherokee families to receive life reservation following their removal from their ancestral lands in the Appalachians. Instead of receiving the life estates that had been guaranteed to these "Old Settlers" in Arkansas Territory by the 1817 treaty, subsequent legislation and aggressive settlement led to unlawful encroachment by white settlers into the land reserved for Cherokee families and, eventually, removal to Oklahoma for many.

Subsequent state and federal legislation continued to erode tribal government throughout the southeast. For example, the State of Georgia annexed all Cherokee lands in the state and voided all Cherokee laws and customs in 1830, after which Cherokee property was sold by lottery (King, Marshall, Smith, and Wren 2009; Thomason and Parker 2003). In throwing his support and refusing to enforce court mandates, now-President Andrew Jackson (7th President, 1829-1837) effectively negated the autonomy of the Cherokee, who had previously been able to actively elect to cede or to maintain lands in a legally recognized, and enforceable, treaty. Outrage over these actions led to two US Supreme Court cases, including the *Cherokee Nation vs. Georgia,* in which Justice John Marshall recognized the Indian tribes as "domestic dependent nations," which supported their claims as for autonomy and their right to challenge the Georgia land grab (King, Marshall, Smith, and Wren 2009). The second case was *Worcester vs. the State of Georgia,* in which Chief Justice John Marshall's opinion again recognized the tribes as "...dependent sovereigns or nations within the borders of the United States. The Tribe was not subject to the passage of Georgia's state laws that disenfranchised them and determined that such laws were unconstitutional" (King, Marshall, Smith, and Wren 2009:89). However, President Jackson refused to enforce the decision, enabling the stripping of tribal lands from native peoples and ignoring the rule of law (King, Marshall, Smith, and Wren 2009).

President's Jackson's efforts towards removal were manifold, as he effectively ignored the conditions of prior land treaties, supported blatant land grabs (e.g., the Georgia annexation), and served as a strong advocate for the culminating legislation, the Indian Removal Act of 1830. This act provided for the formal removal of Native Americans to land west of the Mississippi River. According to the act, the President was enabled to exchange existing native lands for those west of the Mississippi and then fund and implement removal. While the law applied broadly to all indigenous peoples, it was targeted at the removal of the "Five Civilized Tribes," the Creek, Cherokee, Seminole, Choctaw, and the Chickasaw.

The Choctaws were the first to emigrate west following the Treaty of Dancing Rabbit Creek in 1830 (Thomason and Parker 2003). They were followed by the Creeks, Chickasaw, and Cherokee, who were removed from Tennessee, Georgia, Mississippi and Alabama. Led by President Martin Van Buren, the implementation of the Treaty of New Echota in 1838 led to the forced removal of the native peoples who remained east of the Mississippi.

Although many left peacefully, native peoples suffered through the innumerable indignities that would come to typify the Trail of Tears. It is estimated that more than 500 Chickasaws perished during the Trail of Tears, while the Creek lost upwards of 3,000 individuals and the Cherokee are

estimated to have lost over 4,600 individuals during removal (Thomason and Parker 2003). These deaths were caused while waiting for the journey to start, during the journey itself, and even afterwards once groups reach Indian Territory. Essentially, native peoples were brought from their ancestral lands to forts and then to emigrating depots or internment camps, which were essentially large, unsanitary camps, where many died from dysentery, smallpox, fever, or even starvation, while waiting for the official movement westward to begin between January of 1837 and September of 1839. Actual overland travel proved equally disastrous, as groups were forced to travel during winter months without proper preparation and in terrible conditions. Rations purchased by both the federal agents and by the tribal nations to provide for the trip were inedible, spoiled, or arrived too late to be of use, on account of graft, corruption, exposure, or mismanagement by unethical merchants (Thomason and Parker 2003). Travel was particularly challenging following the 1838 forced removal of individuals, which forced the Cherokee Nation to travel west during a harsh winter of 1838 to 1839 and without personal possessions.

The 1830s took their toll on all of the "Five Civilized Tribes," albeit in slightly different ways. For the Seminoles, the post-1830 activities resulted in a long, extended war that lasted until 1834. Over the course of several years, the US government expended over 20 million dollars and lost 1,500 soldiers trying to rout the Seminoles from the Everglades and Big Cypress Swamp. The loss for the Seminoles was also considerable, with losses representing upward of 40 percent of their population (Thomason and Parker 2003). Eventually, though, approximately 2,200 Seminole were taken west, although many remained in Florida, where they were later granted reservation in the twentieth century (Thomason and Parker 2003). Additional treaties established small landholdings as reservations in North Carolina, Alabama, Mississippi, and Florida, although the majority of the Native Americans were eventually removed from their ancestral lands.

For the Cherokee and the other nations passing through northern Alabama, removal occurred primarily through seventeen detachments that left from the primary emigrating depots between June and December of 1838 (Thomason and Parker 2003). These detachments took multiple routes, each averaging over 1,000 miles of travel by land, water, and rail. Four detachments traveled to Indian Territory through a river path, including groups consisting primarily of Georgia Cherokee and accompanied by military escorts (Thomason and Parker 2003). Of these four river detachments, three feature Tuscumbia Landing.

One of the river detachments was led by Lt. Edward Deas. Deas led 489 Cherokee from the camp near Ross's Landing (Chattanooga) on June 6, 1838, to board a steamboat, the *George Guess*, and then travel down the Tennessee River to Decatur, Alabama. Once at Decatur, the group boarded the Tuscumbia, Courtland, and Decatur Railroad Company (TC&D), which had recently been completed in 1832 (Figure 24). The TC&D was one of the first railroad lines built in the south and is purported to be the first railroad west of the Appalachians (Sheridan 1981). The line terminated at Tuscumbia Landing, located on the southern bank of the Tennessee River (aka Pickwick Lake), east of the juncture with Spring Creek. Thomason and Parker (2003) report that the limestone foundations of the original steamboat landing are visible, along with stone foundation walls of the old depot. The Tuscumbia Landing site also features an old wagon road and the abandoned railroad bed (Sheridan 1981; Thomason and Parker 2003). The Tuscumbia Landing site was nominated to the NRHP in 1981 in recognition of the significance of the TC&D and its role in transportation-related development in the south (Sheridan 1981), but it was recommended later that the NRHP nomination be amended to include its role in the Trail of Tears (Tomason and Parker 2003).

Figure 24. Excerpt from Thomas Gamaliel Bradford's 1835 "United States, Exhibiting the Railroads and Canals" showing the Tuscumbia, Decatur, & Decatur Railroad. APE shown as red star. (UA Cartographic Research Library 2017).

After reaching Tuscumbia Landing, the detachment boarded a steamboat, the *Smelter*, and proceeded downriver to the steamboat landing site at Waterloo over a period of two days. Once the entire party had been transferred to Waterloo, the *Smelter* continued its path down the Tennessee and reached the Ohio River on June 12, 1838. From there, it went to Paducah, Kentucky, and entered the Mississippi River, passing Memphis on June 13, 1838. The *Smelter* traveled up the White River to the Arkansas River, stopping in Little Rock on June 17 and then reaching Fort Coffee, Arkansas, on June 19. The detachment disembarked and continued to Indian Territory. Lt. Deas then returned to Tennessee, where he would lead additional detachments to Indian Territory. Additional details regarding this detachment can be found in King, King, Marshall, and Smith's (2009) work on the Tuscumbia, Courtland, & Decatur Railroad.

A second river detachment led by Lt. R. H. K. Whitely and consisting of 1,000 Cherokee followed the same route. Whitely's detachment boarded the *George Guess* from a camp four miles north of Chattanooga on June 12, 1838. Flatboats were used to transport the party to Ross's Landing, where the they waited for additional Cherokee to join the detachment. A combination of flatboats and the *George Guess* were used to reach Kelly's Ferry on June 16, 1838. Once at Decatur, the detachment again boarded the TC&D for Tuscumbia Landing, where they camped on site between June 22 and June 26, 1838. During this time, there were at least four deaths of children on account of sickness (King, King, Marshall, and Smith 2009). This second detachment left Tuscumbia Landing on June 27, 1838, using the flatboats to navigate the shoals down to the Waterloo landing, where they boarded the *Smelter* on Jun 29. The *Smelter* entered the Ohio River, stopped at Paducah on July 1, stopped on July 3 at Memphis, and then travelled up the White River to enter the Arkansas River. Low water levels forced the steamboat to stop, during which time the group camped on the bank of the Arkansas River. The detachment was then taken up by the steamboat *Tecumseh*, which was hired to take them to Fort Gibson but only reached Lewisburg. The Whitely

detachment continued overland to Van Buren, following modern-day US Highway 64, during which time several deaths and illnesses were reported, before travelling to Evansville, Boston Mountain, and Indian Territory (Thomason and Parker 2003). The detachment was disbanded on August 5, 1838, in the Flint settlement southeast of Tahlequah, likely near Stillwell, Oklahoma. Additional details regarding this detachment can be found in King, King, Marshall, and Smith's (2009) work on the Tuscumbia, Courtland, & Decatur Railroad.

The final detachment of the Trail of Tears left on December 5, 1838, using a canal to bypass the shoals, rather than deboarding at Decatur and utilized the TC&D. This final detachment consisted of 231 Cherokee, including Cherokee Chief John G. Ross and his family, and was led by Captain John Drew. Once arriving at Tuscumbia, Ross purchased the steamboat *Victoria*, and then followed the water route as noted above, reaching the Illinois Campground near Tahlequah, Oklahoma, on March 18, 1839.

With this final detachment, the Trail of Tears began coming to a close, although the difficult process of migration and resettlement was by no means complete. The loss of life during the journey westward forever impacted the tribal nations, while the process of disbandment of the travel detachments and the subsequent resettlement in Indian Territory came with its own set of social and economic concerns. Displaced tribal nations sought to re-establish themselves in new territory, while the remaining native peoples who stayed in their ancestral lands fought to survive amid the sweeping economic and social changes of the nineteenth century, to include increased racial tensions between the enslaved population of African Americans and whites, the influx of European immigrants, increasing income disparity, and tension between the federal government and individual states. For the area under consideration here, activities associated with the Trail of Tears in the vicinity of Tuscumbia Landing represent the only detachments in which the Cherokee traveled by train during the trail, while the site provided a launching point and campsite for two different detachments. That these activities occurred within the APE suggests that a range of sites may represented, including, at a minimum, temporary to more permanent campsites and cemeteries related to the two river detachments.

The Tuscumbia, Courtland, and Decatur Railroad

Prior to Indian Removal, planters and businessmen had been searching for a way to bypass the shoals, which proved impassable for many boats much of the year. Despite an 1833 act of Congress that made way for a proposed canal to bypass the shoals and other short-lived plans for improvements, no permanent transportation routes were established and the shoals continued to be an impediment to development and river travel to the burgeoning economy of northern Alabama and the growing towns of Tuscumbia and Florence.

In an effort to link the riverboat travel with the raw goods being produced in the hinterlands, the Tuscumbia Rail Road Company (est. 1830) and, later, then Tuscumbia, Courtland, and Decatur Railroad (TC&D, est. 1832) were established. The Tuscumbia Rail Road Company was a horse powered railroad that linked the town to the riverboat landing and was the brainchild of David Hubbard, a local farmer inspired by a recent trip to Pennsylvania (Sheridan 1981). This horsepowered railway was eventually extended to Decatur to effectively bypass the shoals, after which point steam locomotives were utilized and the TC&D was born.

TC&D was, in part, conceived of by David Deshler, an engineer who developed and executed the plans for the TC&D, and Benjamin Sherrod, President of TC&D. TC&D played an important role in Indian Removal, but it also transported a significant quantity of both people and goods, including raw goods from the hinterlands and the movement of troops back east to assist in Cherokee Removal (King, King, Marshall, and Smith 2009). Through the development of a depot

at Decatur, Courtland, and Tuscumbia, the TC&D provided an important link in the supply chain for the mid-nineteenth century south.

In the period in which the TC&D was operating in the nineteenth century, TC&D brought people and goods into the region, including the town of Tuscumbia for which the terminus was named. The nearby town of Tuscumbia developed as early as 1817 and became a large commercial center because of Tuscumbia Landing, rivaling the nearby city of Florence, located north of the river (King, King, Marshall, and Smith 2009). In fact, both cities are shown on LaTourette's 1837 Map of Alabama, in addition to a Rail Road Depot and the path of the TC&D that includes the APE (Figure 25). Development of the former 1820s-era steamboat landing site at Tuscumbia Landing increased drastically following the 1832 establishment of the railroad, including the construction of a warehouse, railroad depot, and sheds in 1832, the expansion of a warehouse reaching 70 ft in length and equaling the width of the existing warehouse at Tuscumbia landing in May of 1833. A total of nine structures were identified and described by SAI in their remote sensing survey of the ridge (King, Johnson, and Marshall 2012). The structures were divided into two warehouse complexes. Complex 1 includes structures 1-3 and Complex 2 included structures 4-9. Since no testing was conducted and the historic records do not include a detailed map, the function of many of these structures are uncertain. However, surface evidence provides some clues. Structure 1 had almost no surface evidence and is therefore the least understood. Structure 2 had a dense scatter that included slag, sponge iron, and glazed brick that may indicate a blacksmith shop, kiln, or hearth. Structure 3 has an extant limestone block foundation on the three sides protruding from the slope. Structures 4 and 5 appear to have been wood frame structures set on limestone piers. Structure 6 was likely a brick building with a uniform brick floor and was likely the second largest structure. The TC&D railroad seems to have terminated at Structure 7 and seems to support it being used for loading and unloading of goods at the landing. This structure was the largest and remnants of an incline plane for the loading and unloading of boats was found immediately downslope from the area. Structure 8 was similar in size to Structure 1, but had a number of artifacts on the surface as well as numerous bricks. Structure 9 was had limestone foundation stones, a brick scatter, and several large oyster shells were found on the surface by SAI. It may have served as a cook house or restaurant for the depot. In addition to the structures, several sets of limestone and brick stairs and paths connected the buildings with one another. While several improvements were made at Tuscumbia Landing over the years, the depot, by all accounts, was impressive. It was three stories high and with an inclined plane. The brick foundation of the depot, the first of its kind in the state of Alabama, purportedly remains preserved at the landing site (King, King, Marshall, and Smith 2009). The first floor of the depot was of rubble masonry, while the upper two were of brick. It was "set back 105 feet in a horizontal direction from the edge of low water. The upper floor was 62.37 feet above the high water mark and 85.75 feet above the lowest water mark, and was on a level with the railroad. An inclined plane passed from the edge of low water into the house upon the second floor and terminated upon the upper floor. The inclined plane was worked by horsepower by means of gearing erected behind the building. A floating wharf was constructed to accommodate itself to that inclined plane at different stages of the water in the river" (Sheridan 1981:2). Additional features observable at the site include "an old wagon road, limestone foundations of the original landing, stone foundation walls, and brick debris of the terminal building on top of the bluff" (Sheridan 1981:2). The wagon road flanks Spring Creek and leads to the base of the bluff rising above the river, where the limestone foundations of the depot are visible. The terminal building for the TC&D, of which the stone foundation and brick debris are visible, would have been located at the bluff. The abandoned railroad bed is visible on site and would have once featured both passenger and freight cars drawn by horses, who walked on a parallel gravel pathway (Sheridan 1981). At its initial inception, the railroad was 2.1 miles long and construction of "oak stringers capped with flat iron strips 2 inches wide by one-half inch thick" (Sheridan 1981:2).

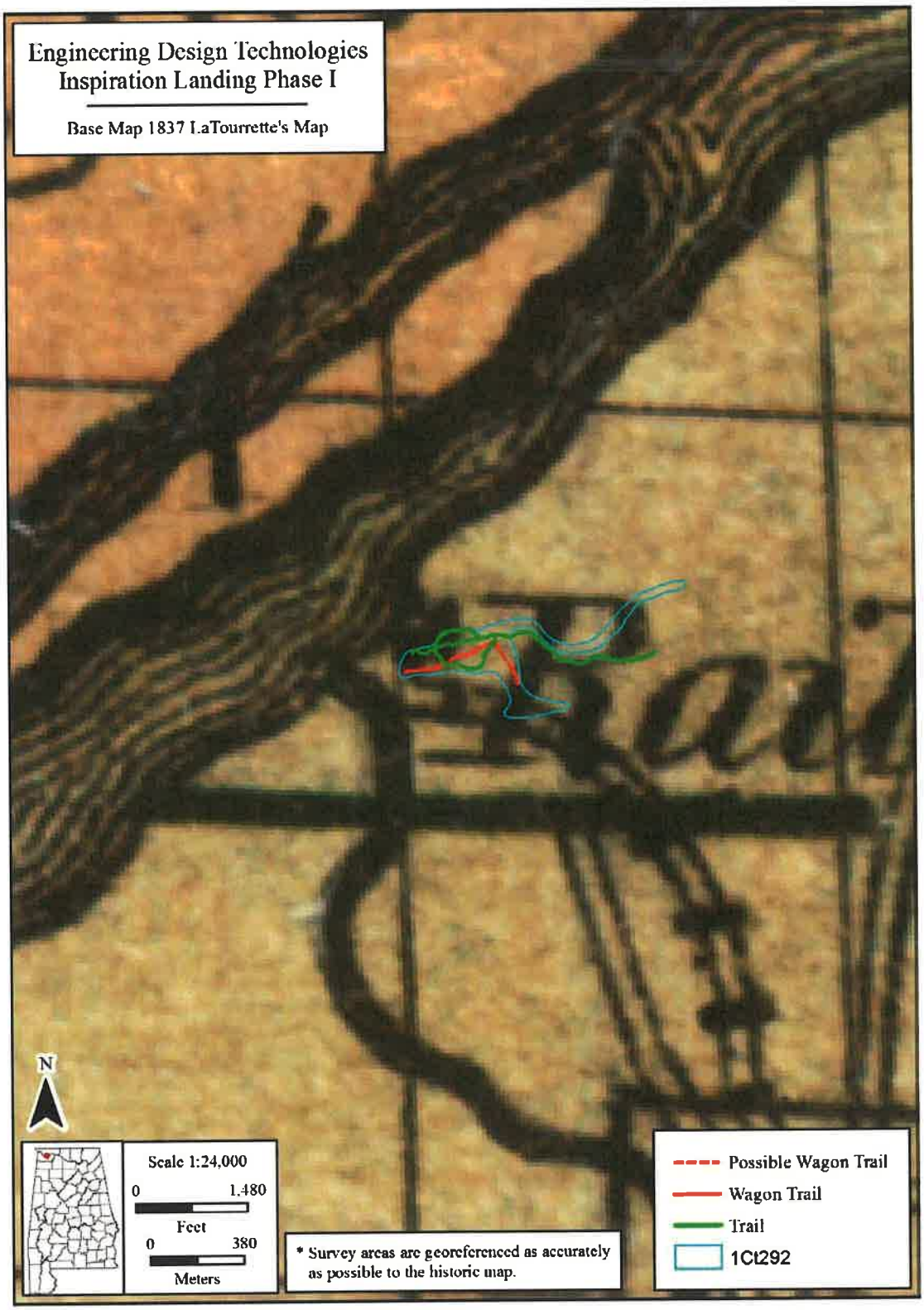

Figure 25. Excerpt from John La Tourette's 1837 Map of Alabama showing the walking and wagon trails, the Railroad Depot at Tuscumbia Landing, the TC&D, and the new boundaries of Site 1Ct292 (UA Cartographic Research Library 2017).

TC&D's operations, however, were plagued by questionable financing, resulting in several court cases that tormented the company throughout the 1840s (King, King, Marshall, and Smith 2009; Sheridan 1981). In fact, even as TC&D was transporting the detachments during the Trail of Tears, it was in the midst of being determined financially insolvent. Shortly following the death of Sherrod in 1847, the railroad was foreclosed on and then sold as a part of a mortgage to Deshler, the original engineer for the railroad. The railroad continued operation as the Tennessee Valley Railroad Company under Deshler's direction until 1848, when it was sold and reformed as the Memphis & Charleston Railroad Company (M&C) in 1850. The newly formed M&C, though, was impacted by the Civil War (1861-1865), as was the rest of the south. River travel was impacted, and railroads were either fought over by Union and Confederate troops or completely demolished. Accounts suggest that upwards of 140 of the total 155 miles of the M&C line were demolished during the Civil War (King, King, Marshall and Smith 2009).

Broadly, though, the impact that the TC&D had on the social and economic development of the region is notable, as it helped to link communities by both river travel and by terrestrial transport. Common goods included sugar, cotton, coffee, whiskey, wine, brandy, food materials, lead, shot, tobacco, cigars, candles, mahogany, cheese, iron, axes, rope, literature, turpentine, molasses, mail, furniture, and other house goods (Sheridan 1981). The TC&D was the first railroad in the state and, by default, featured the "first steam locomotive, first engineer, first conductor, and the first railroad bridge" in Alabama (King, King, Marshall, and Smith 2009:294). It also featured the first all metal steam engine built in the United States, an engine named Comet. The TC&D also figures prominently in the oral accounts of the area, as reported by Mrs. J.M. Clark in King, King, Marshall, and Smith (2009:294-295):

> *My earliest memories are of Courtland, although Moulton was my native place. At Courtland my father, whose name was Jackson, was, when I can first remember, Warehouseman, railroad agent they would now call it – for the Decatur-Tuscumbia Railroad, the first railroad in the South, and among the very first in the United States, or in the world. Although quite a child, only 5 years old, when my father first moved there (Courtland) I remember it all very vividly. I remember the queer little engines, the funny little 'freight wagons' you have seen so often in school histories, of that day. Not less queer and funny were the passenger coaches of that day, a sort of exaggerated stage coach, as I remember it. I can remember for awhile that passengers went in passenger coaches pulled by horses, while freight or goods was carried on cars pulled by engines. Of course both styles of locomotive were in use on the same tracks. I remember distinctly the 'stringer' of wood on which the broad metal piece was spiked – this in lieu of the present 'rails' we know in the railroad world seventy odd years later.*
>
> *I can't recall the speed with which the railroad whizzed its passengers from place to place, but I know it was considered quite an achievement for those times. I remember often taking trips from Courtland up and down the road. Of course we considered it something akin to a miracle and had one then dare to foretell the wonders that those living then would yet live to see come to pass, he would have been laughed to scorn and probably sent to the insane asylum.*
>
> *Who for instance, would have dreamed that in the span of one life these little horse and steam railroads would have developed and grown into the magnificent 'systems', each carrying the commerce of an empire, with which the entire country is literally gridironed (Recorded by W. H. Norris and found in the Leighton, Alabama Library).*

Eventually, the Memphis & Charleston was incorporated into the Southern Railroad, which eventually became the Norfolk Southern Railroad (King, King, Marshall, and Smith 2009). The existing track of the TC&D has changed and been rerouted at several points, although portions of the rail line are still in use in modified form. Within the Tuscumbia Landing site, the footprint of the original TC&D railway can still be seen in several places, providing an important reminder of both the ambition and failures of nineteenth century development in the south.

Tuscumbia Landing, the Civil War (1861-1865), and the Late Nineteenth Century

The growing tensions leading up to the Civil War were felt in the nearby town of Tuscumbia and at Tuscumbia Landing. Colonol Turchin led Union troops to occupy both Tuscumbia and the Tuscumbia Landing in April of 1862, where they unloaded near 100,000 rations and purportedly destroyed much of the landing upon abandoning the site (Sheridan 1981). The following year, in February of 1863, the Confederacy had once again taken control of the landing and installed batteries, which then came under attack by five Union gunboats. In April of the same year, nearly 1,700 Confederate troops were stationed at Tuscumbia Landing, although they were routed by the end of the month by Union troops under the command of General V. M. Dodge. General Dodge destroyed the ferries, railroads, mills, and generally everything that would provide aid to the Confederacy, likely including the depot and rail line at Tuscumbia Landing. Confederate troops under command of Colonel James Jackson crossed through the area to raid Lauderdale County, Alabama in April of 1864, and then Confederate General Nathan Bedford Forrest and his cavalry hid on Seven Mile Island in October of 1864 to avoid exposure by troops on the north side of the Tennessee River (Sheridan 1981), ferrying troops over to Tuscumbia Landing over a period of two days.

As noted above, the M&C was nearly demolished in the course of the Civil War, taking extensive damage to both the rail line and the depot at Tuscumbia Landing. After the conclusion of the war in April of 1865 both river and rail travel began anew, Tuscumbia Landing again became a point of reference for trade via the steamboat landing. However, the nearby town of Florence gained prominence as the primary trading port in the Muscle Shoal area, and the warehouses and the railroad depot at Tuscumbia Landing were never rebuilt (Sheridan 1981). Concurrent with the burgeoning growth of Florence was the newly incorporated town of Sheffield, established in 1885, located within the recently created Colbert County, created in 1867 and named after George and Levi Colbert, noted Chickasaw chiefs from the region.

In fact, by 1896, a map of Colbert County shows the sprawl of nearby Sheffield extending into the vicinity of the study area, fueled by the development of several nearby furnaces (Figure 26). In fact, the area to the northeast of the APE was known as Furnace Hill, a reference to the five blast furnaces that were built between 1886 and 1895. These blast furnaces produced nearly 221 tons of pig iron daily and were operated by Sloss-Sheffield Iron & Steel Company until 1927, tying this north Alabama town to the late 1880s rise and development of the Birmingham District. This development carried northern Alabama through Reconstruction and paved the way for industry in the twentieth century.

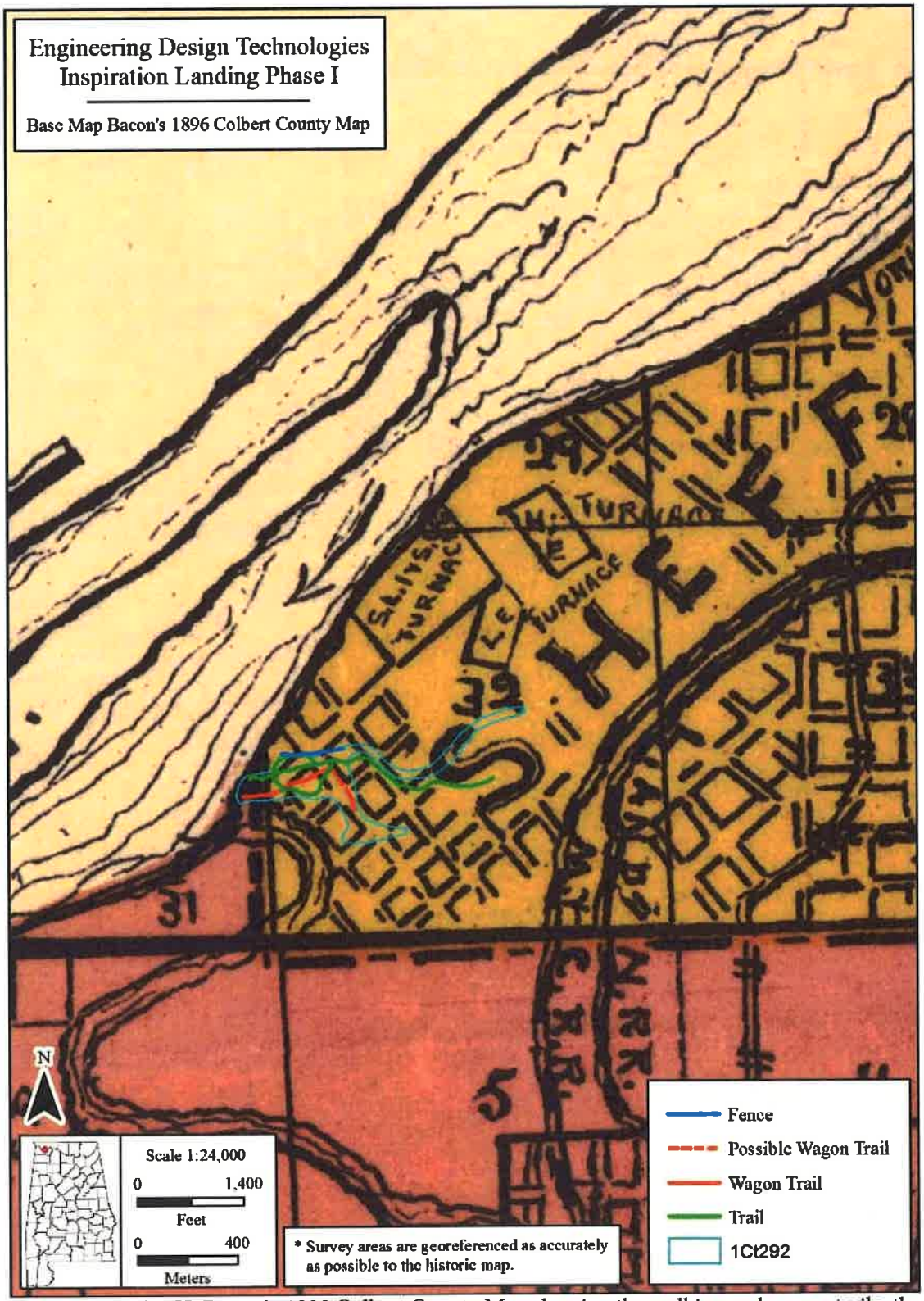

Figure 26. Delos H. Bacon's 1896 Colbert County Map showing the walking and wagon trails, the location of nearby furnaces, the growing town of Sheffield, and the new extents of Site 1Ct292 (UA Cartographic Research Library 2017).

Twentieth Century Development

The twentieth century ushered in a range of changes in industry, production, and socioeconomic distinction that mirrored what was taking place elsewhere in the post-Reconstruction south. However, northern Alabama would benefit from efforts to bring cheap, reliable energy to the southern states and would be drawn into a global war effort as World War I began in 1914 (ending in 1918). In an 1908, Soil Map of Colbert County, the APE is shown as the terminus for a rail line and adjacent to development, while a 1908 map of Colbert County shows the APE located adjacent to various commercial entities, but with no specific industry noted within the APE (Figures 27 and 28).

However, as the world moved increasingly into global conflict and the US sought to maintain neutrality, the US felt it incumbent to engage in a more robust plan for military preparedness with regard to the size of the active military, maintaining a US Army Reserve (est. 1908) and a National Guard, and increasing the productive capacity of the nation to meet potential needs should the US have to mobilize for entry into World War I. In order to address these broad issues, the National Defense Act of 1916 was signed into law by President Woodrow Wilson. In addition to increasing the size of the standing army, the National Guard, and the US Army Reserves, and expanding the capability of the military with regard to the Air Division, among many other actions, the 1916 Act also provided for the development of two nitrate manufacturing plants to assist with the product of explosives in potential war efforts, the construction of a residential village to support the workers, and a the construction of a hydroelectric dam to support the factories and the residential village. In accordance with this mandate, Sheffield, Alabama, was selected for the location of No. 1 Nitrate Plant No. 1and Muscle Shoals was selected for the location of Nitrate Plant No. 2 . The combination of a deep, interior position and the potential for rapidly available hydroelectric power led to the selection of these communities (Bailey 1984).

Construction for these resources began in 1918, nearly two years after the 1916 Act, meaning that World War I ended before these resources could be fully utilized to assist in the war effort. However, the preparation of the 1916 legislation did assist in the broader US mobilization effort when the US did enter WWI in April of 1917. In the meantime, the 1916 Defense Act had a major impact in Tuscumbia, Sheffield, and neighboring Muscle Shoals.

By 1918, the US Army Corps of Engineers had begun construction of Wilson Dam, a concrete gravity dam built on a limestone rock foundation. Wilson Dam was built to house 18 hydraulic turbines, located approximately 9.15 km (5.68 mi) upstream of the APE. It was not completed until 1924, and its eventual administration was handed over to the TVA after the agency was constructed through federal relief legislation in 1933. The dam was listed on the NRHP and the NHL in 1966 (Rettig 1976).

Development also began to boom near the APE. The 1914, Muscle Shoals, AL, and the 1924, Tuscumbia, AL, topographic quadrangles show extensive development, including numerous structures, a sediment pond, a rail line, and various roadways (Figure 29). By 1918, construction of No. 1 Nitrate Plant No. 1 was nearing completion, and it began utilizing the "German-developed Haber process in an unsuccessful attempt to produce ammonium nitrates," and construction of the nearby No. 2 Nitrate Plant No. 2 began "...which utilized raw materials in the Cyanamide Process to produce nitrates for explosives" (Bailey 1984:11). This technology, which fixed nitrogen from the atmosphere through ammonia, was confiscated from the Germans at the outbreak of WWI. However, only a portion of the plans were acquired, and therefore the nitrate plant experienced continued operational difficulties throughout its operation. These two plants were unique in the nation because they were funded by federal legislation, built to decrease US reliance of foreign nitrate sources, and specifically targeted to contribute to planned war efforts in WWI.

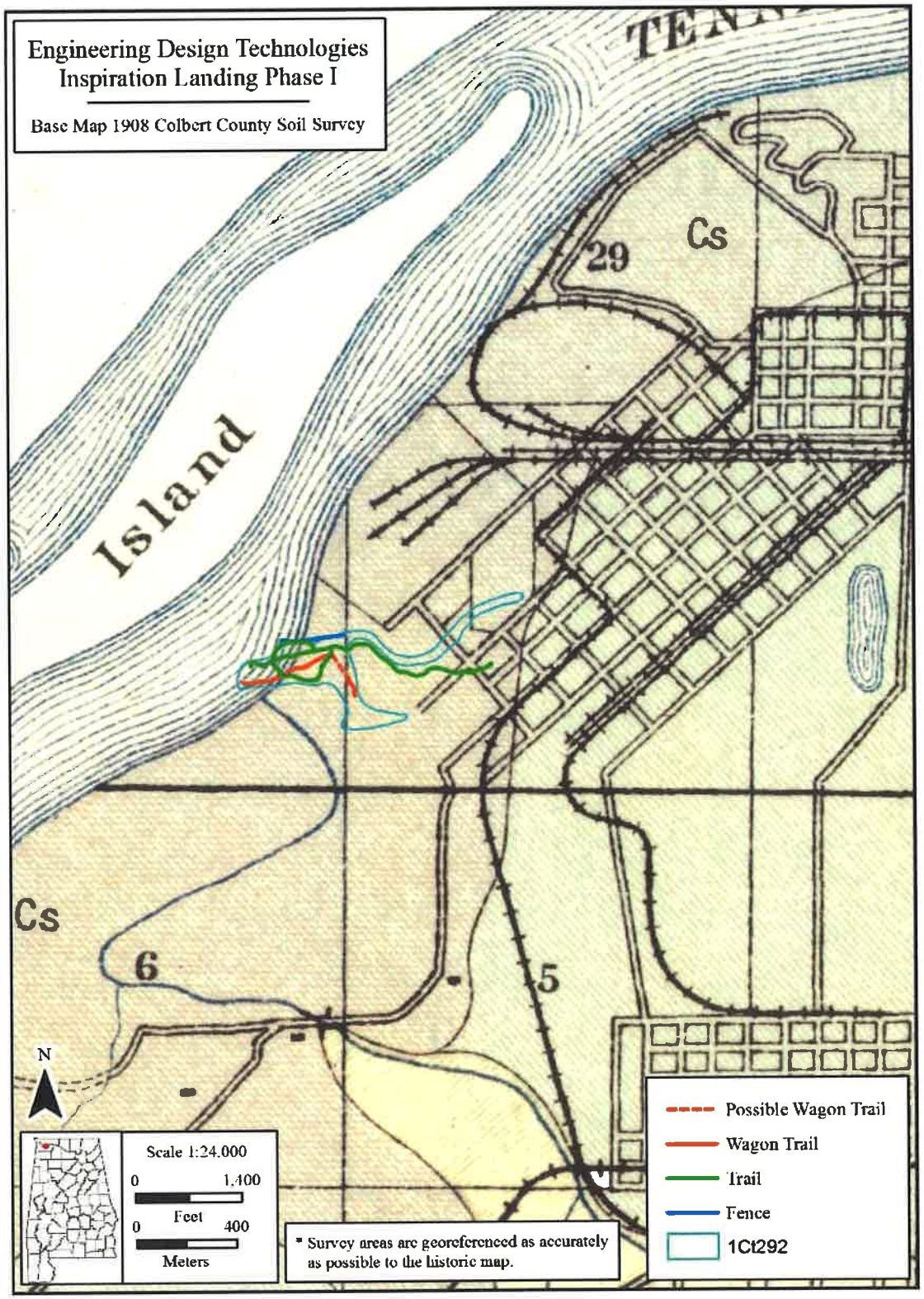

Figure 27. USDA 1908 Colbert County Soil Map showing rail lines and city blocks in the vicinity of the trails (UA Cartographic Research Library 2017).

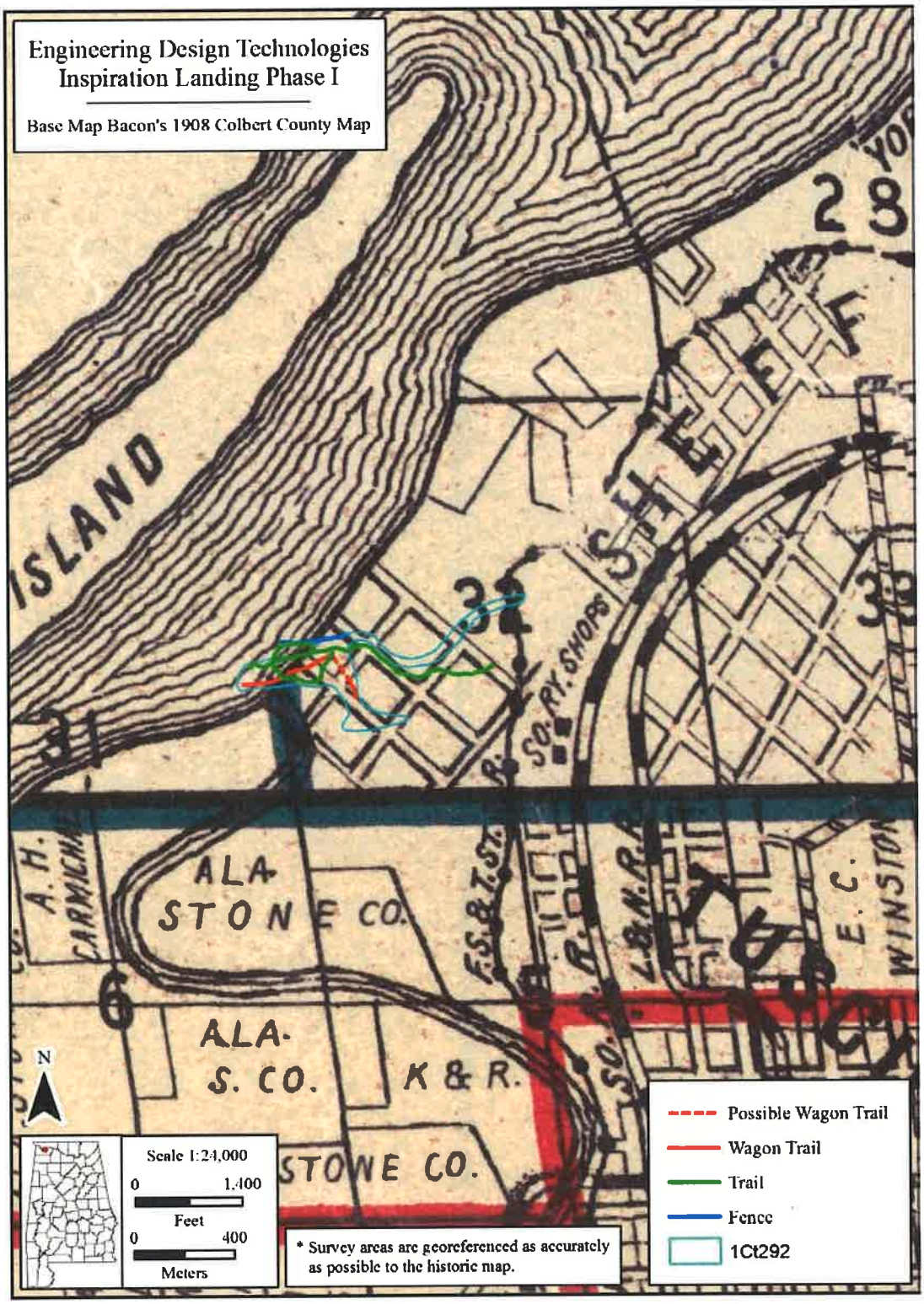

Figure 28. Delos H. Bacon's 1908 Colbert County Map showing the walking and wagon trails, including unspecified streetscapes near the APE, new Site 1Ct292 boundaries, adjacent rail lines, and commercial/industrial development sur-rounding the APE (UA Cartographic Research Library 2017).

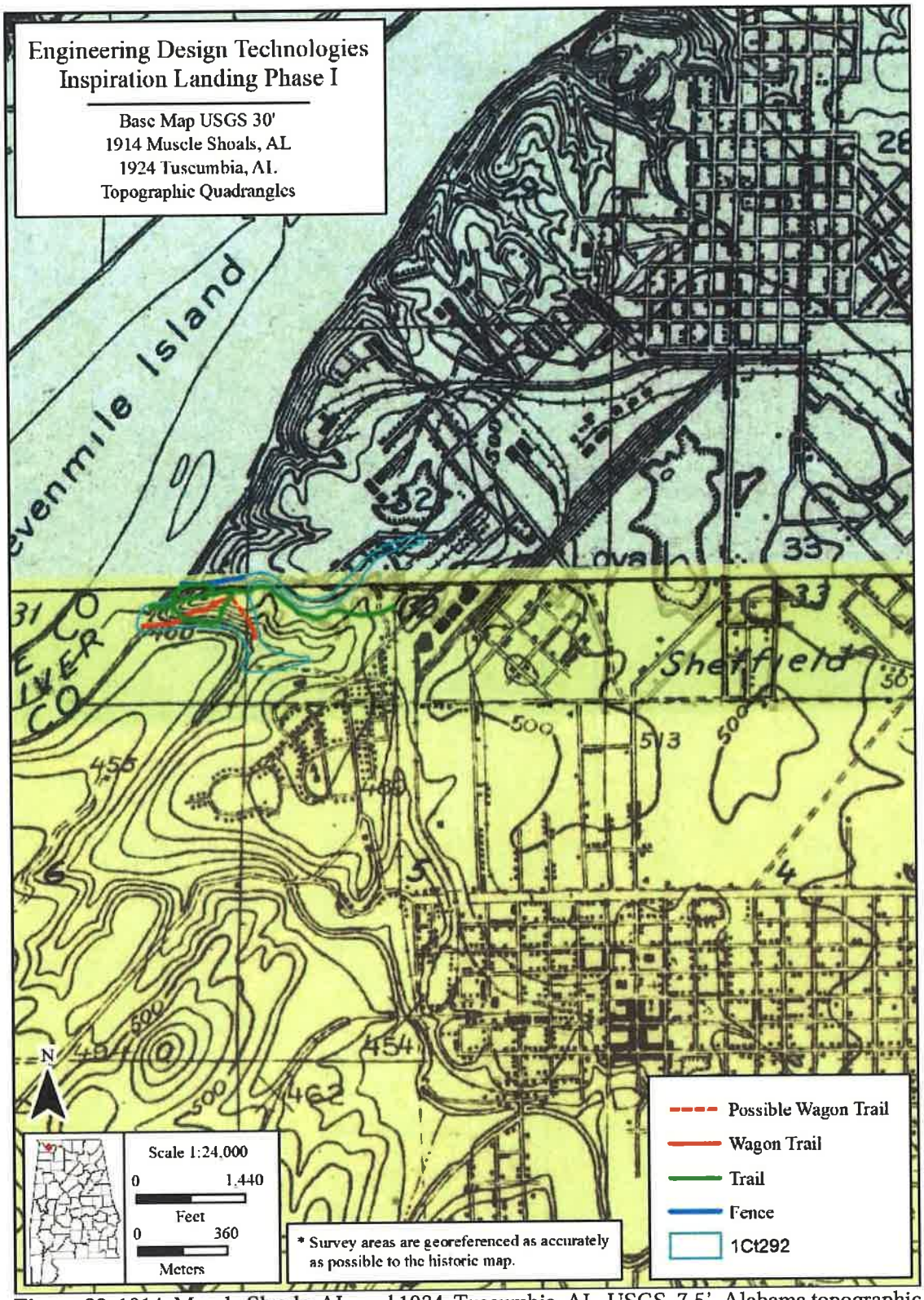

Figure 29. 1914, Muscle Shoals, AL, and 1924, Tuscumbia, AL, USGS, 7.5', Alabama topographic

Neither of these plants are extant today, but the footprint of the buildings are evident in historic maps of the area. The extent of federal lands is visible in the 1937 Colbert County Highway Map (Figure 30), and the actual plant is shown in the 1936, 7.5", Florence, AL, and the 1936, 7.5", Tuscumbia, AL, USGS topographic quadrangles (Figure 31). The plant itself extended into the current APE. A section of the plant was built on the same ridge and starting approximately 90 meters to the east of Tuscumbia Landing. Two primary structures were built in the area that were built for the crystallization of ammonia. According to Richard Sheridan (1980:77) in his Tuscumbia Landing article in the Journal of Muscle Shoals History:

> *Fifty percent ammonium nitrate solution was pumped from the main plant to the crystallization building where it was run into rectangular glass-enameled steel evaporating pans 6 ½ feet wide, 11 feet long and 30 inches deep. There were 5 of these pans, and each contained steam coils and blowers to evaporate the solution so that molten ammonium nitrate was obtained. The molten material was run into crystallizers, and after crystallization it was moved by a conveyor into a bucket elevator used for loading (railroad) cars".*

He further discusses that these two buildings were built at a distance from the main plant because of the explosive power of Ammonium nitrate. If an explosion occurred, it would not destroy the entire plant. Since the Haber process did not work properly, these two buildings were at the center of the failed experiment. To the southeast along Spring Creek, associated construction included a water intake building for Nitrate Plant No. 1. This two story building was built in a decagon shape and composed of a lower level of reinforced concrete, while the upper story was composed of a steel frame supporting a brick façade (Sheridan 1980). A walkway connected the upper story to the nearby slope so that the building would still be accessible during flooding. This building is still standing and is located next to Spring Creek Public Boat Ramp. The plants closed in 1919, and their industrial facilities were eventually turned over to TVA and dismantled in the mid to late twentieth century. However, related construction also included the 1918 addition of nitrate crystallization warehouses associated with the Nitrate Plants No. 1 and No. 2 , adjacent to the original bed of the TC&D, at the Tuscumbia Landing site.

The 1916 Defense Act also provided for the construction of a worker's village adjacent to the dam and to the Nitrate Plant, and, in accordance with the act, three Nitrate Villages were constructed in Tuscumbia and Sheffield. Nitrate Village No. 1 is the only village still extant, while the other two have been demolished. Construction of Nitrate Village No. 1 began in May 1918 and was completed in May of 1919. It was significant as an example of early twentieth century community planning, and for its association with TVA once its administration was turned over between 1933 and 1949 (Bailey 1984). The architects for the village, Ewing and Allens, designed twelve variations of houses within the village and designed the village plan to emulate a very distinctive "liberty bell" street grid (Figures 32 and 33). The community featured 122 residential houses, two school buildings, and one large apartment building; all built in the tradition of 1920s era craftsman bungalows that were popular from the turn of the century through 1920.

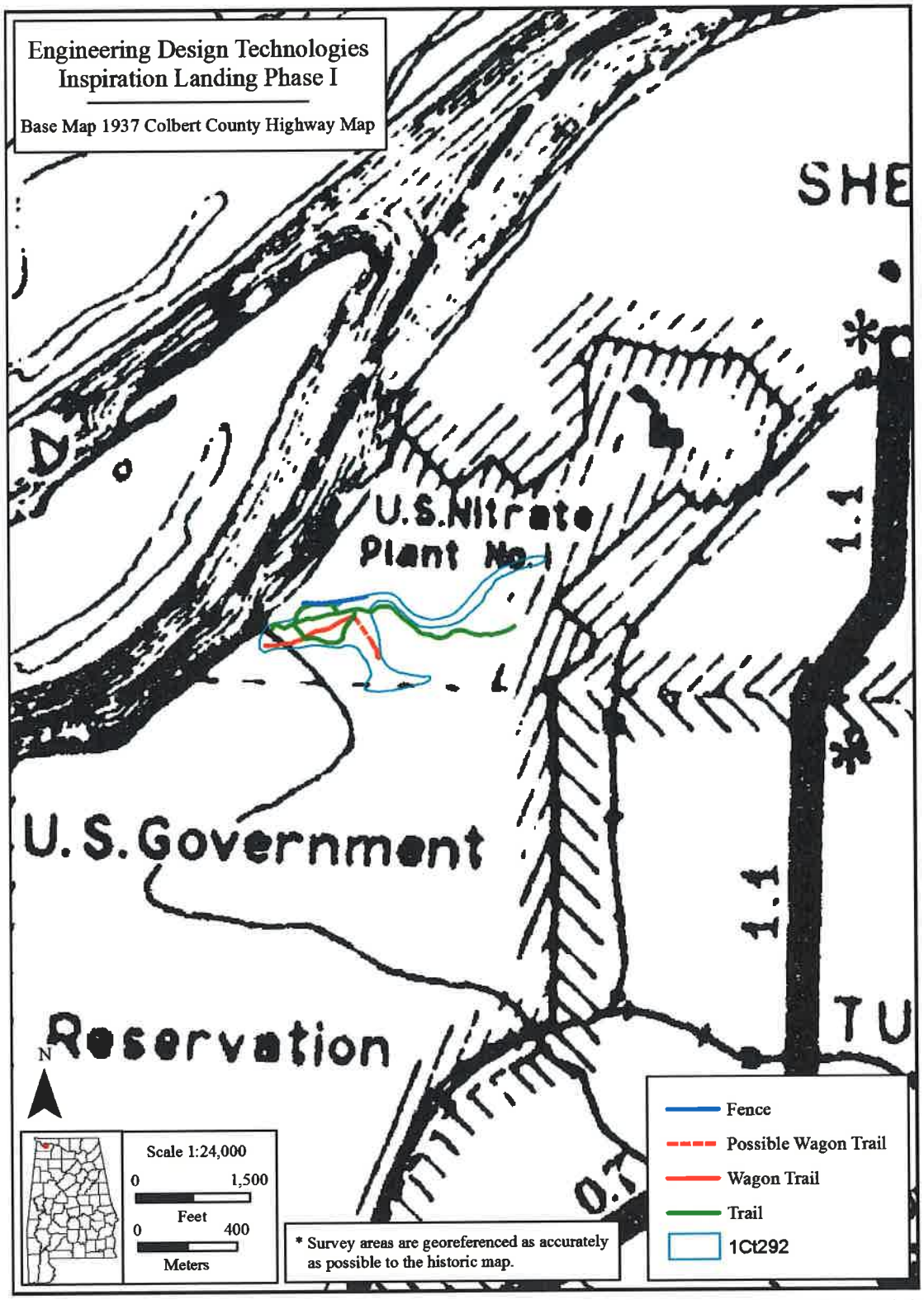

Figure 30. 1937 Colbert County Highway Map showing the US Government Reservation and the location of the US Nitrate Plant #1 (UA Cartographic Research Library 2017).

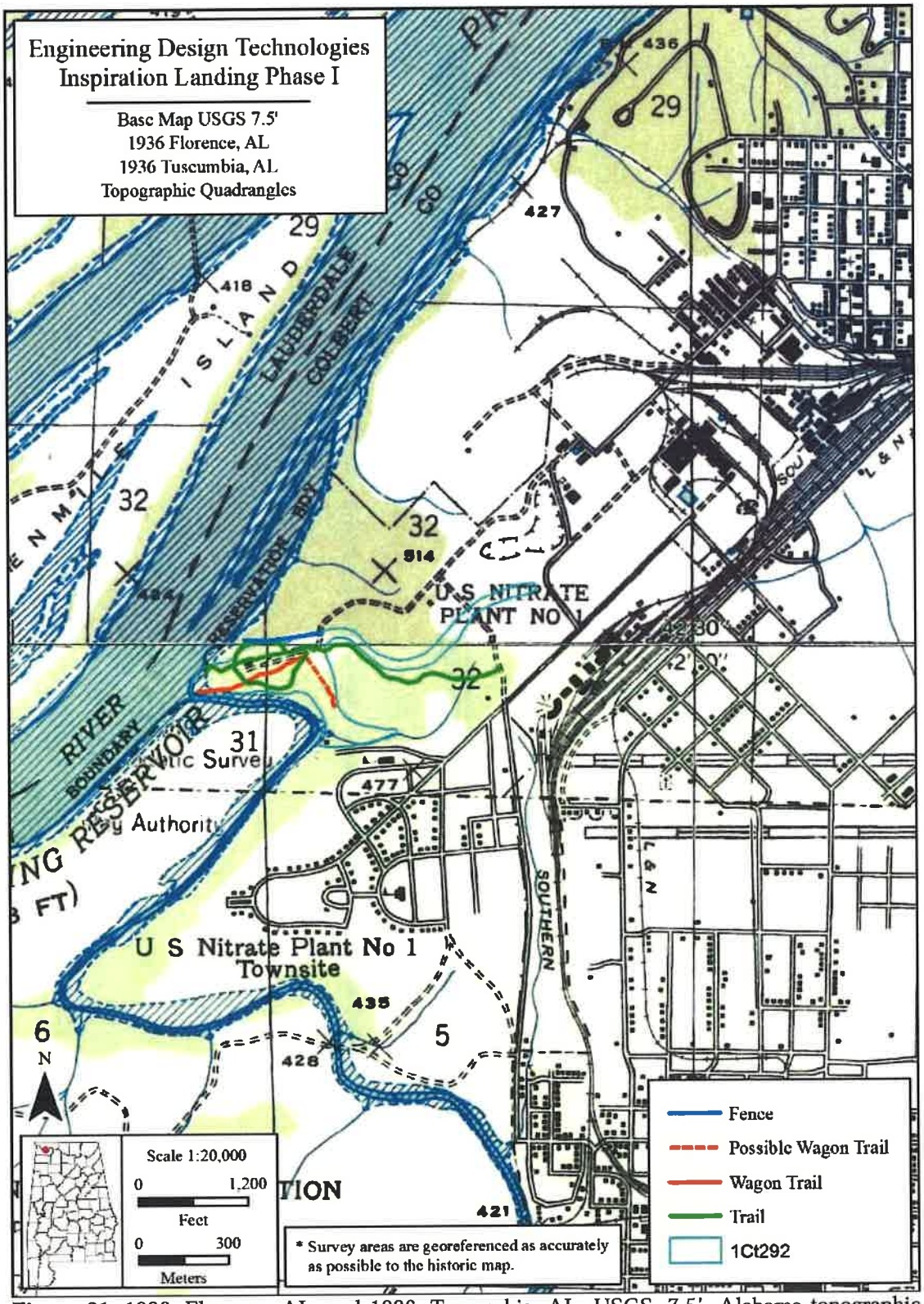

Figure 31. 1936, Florence, AL, and 1936, Tuscumbia, AL, USGS, 7.5', Alabama topographic quadrangles showing the APE and the footprint of the Nitrate Plant #1 (UA Cartographic Research Library 2017).

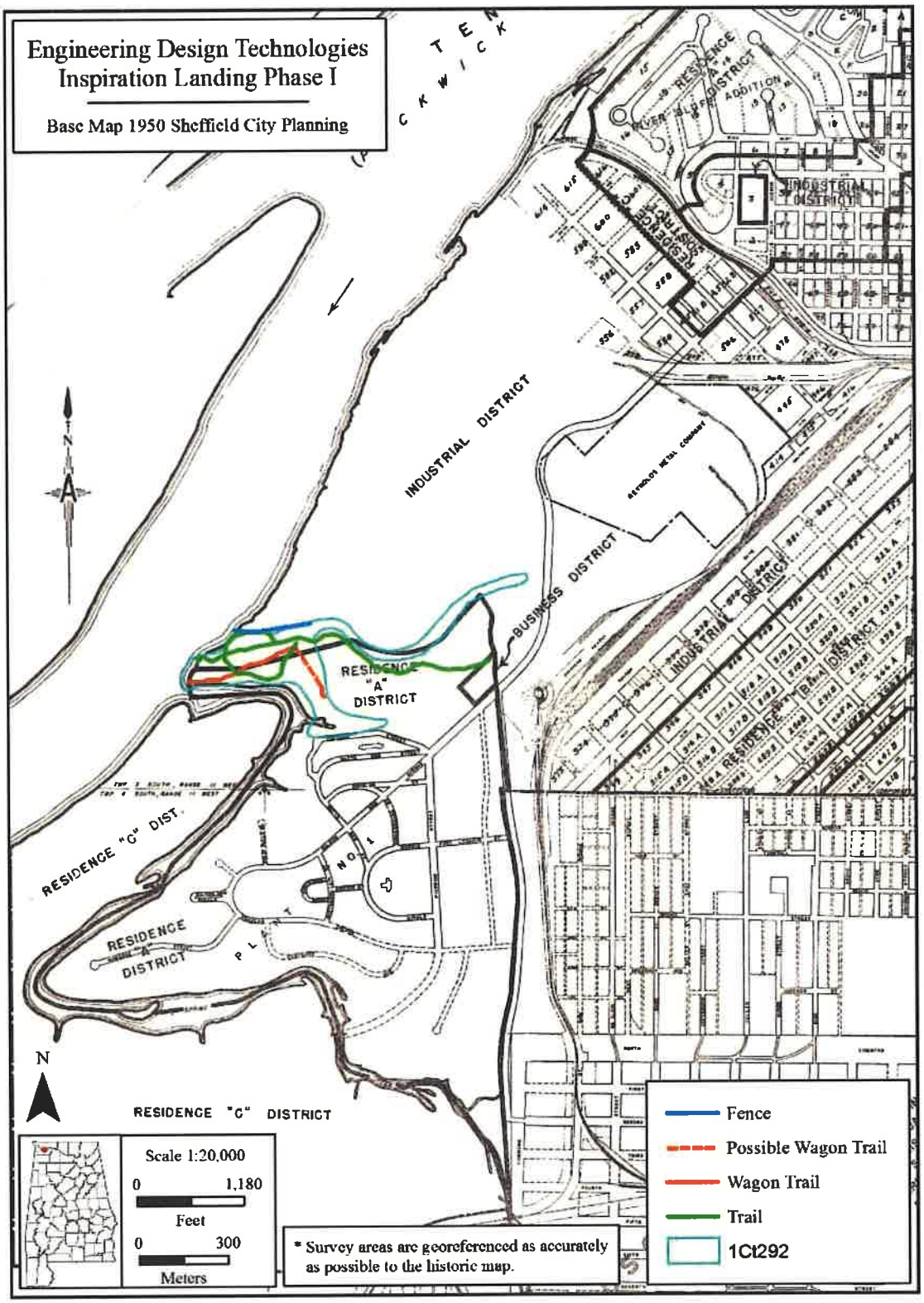

Figure 32. 1950 Sheffield City Planning Map showing the APE and industrial and residential districts near the APE, including the Nitrate Village and its characteristic Liberty Bell layout (UA Cartographic Research Library 2017).

Figure 33. Postcard showing the Nitrate Village #1 at Muscle Shoals, Alabama, and its characteristic Liberty Bell formation (Alabama Pioneers 2017).

The architecture of the village is notable, as it is an early example of prefabrication and standardization using standardized doors, uniform fixtures, two or three sizes of sashes, and standardized architectural elements in the stuccoed walls and terra cotta roofs. The village consisted of both single-level and two-story homes, many of which were removed from the site and then related throughout Sheffield and Muscle Shoals in the 1950s. When the plants closed in 1919, the residential facility was nowhere near full and much debate ensued regarding the future of the area. In 1921, Henry Ford offered to purchase the facility in order to create an economic development program related to his automotive industry, although the onset of the Great Depression from 1929 through the 1930s resulted in extensive delay and political debates reflecting widely varying responses to Ford's offer. Ultimately, Senator George Norris of Nebraska, who championed a public use for the facility, won out, and President Franklin D. Roosevelt signed the Tennessee Valley Authority Act of 1933, which created the agency and also authorized the development of the Nitrate facility for fertilizer production. The Nitrate Village was revamped for occupation, local schools opened, and the Nitrate Village became a focal point for the community (Bailey 1984). TVA deeded all of the public resources (parks, walkways, etc.) to the city in 1949 and then auctioned the houses off in 1949, many of which were sold to current residents. Much of the Nitrate Village remains intact, as it was established as a NRHP-listed historic district in 1984.

The population boom that occurred in Sheffield coincided with the construction of the plants and occupation of the village exacerbated a pre-existing malaria problem. According to the Center for Disease Control's article "The History of Malaria, an Ancient Disease", when TVA took control of the Tennessee River Valley 30 percent of the regional population were affected by the disease (CDC 2018). According to local historical research (Citations), the decagonal building built as a pumping station for Nitrate Plant No.1 was repurposed to be one of four malaria control bases as part of the national effort to eliminate the mosquito borne illnesses that had plagued citizens for

centuries. It is the only one of these four bases to remain standing . The 1931 U.S. Ordnance Department "Outline Map of Properties, Plant No. 1" map indicates that the structure was part of a small U.S. Coast Guard base (Figure 34).

The area surrounding the APE fell into disuse in the latter part of the twentieth century, appearing on modern maps as undifferentiated, undeveloped terrain (NAME Park West in the 1970s, after which it was developed as a municipal park incorporating pedestrian trails, covered pavilions, and hiking trails. The park closed in the 1990s following reports of violent crime and is currently not open to the public, also limiting access to the Tuscumbia Landing site. The Tuscumbia Landing site was listed on the NRHP for its association with the TC&D in 1982, but was later recognized as a part of the NPS Trail of Tears Multiple Property Nomination in 2003.

The prehistoric, historic, and modern history of Tuscumbia Landing, Sheffield, and the vicinity of the APE can be painted in broad strokes that reflect some of the most significant events in the state, including the early Archaic occupation of the Tennessee River Valley, continued occupation through prehistory, early interaction between tribal nations and traders in the seventeenth century, increasing colonization and conflict in the eighteenth century, the indignities of the Trail of Tears and Indian Removal, early industrial development, the development of the first railroad in the state, and the subsequent industrial development meant to support US efforts in WWI. Monuments from these periods can be found throughout the surrounding area, commemorated in historic walks, historic placards, city museums, municipal parks, and the numerous historic districts and sites of memory within a short distance from the APE.

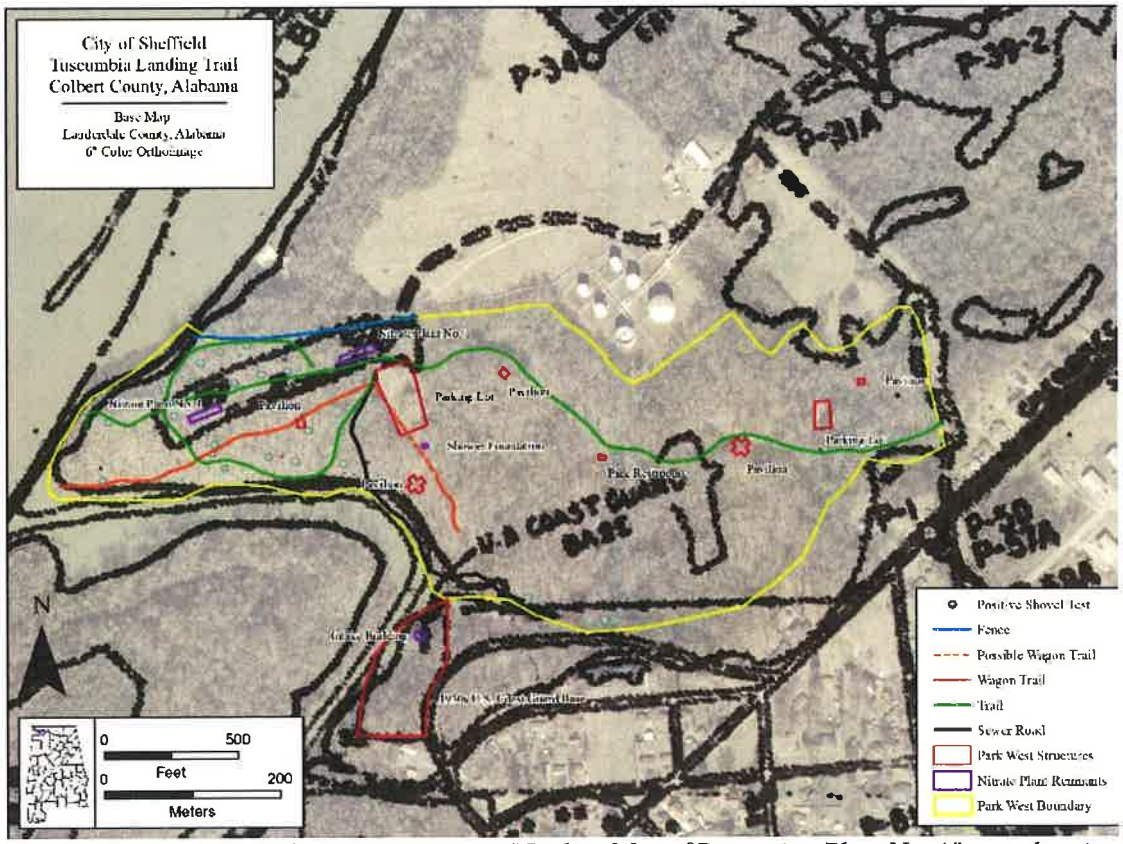

Figure 34. 1931 U.S. Ordnance Department "Outline Map of Properties, Plant No. 1" map showing the adjacent U.S. Coast Guard base south of Park West.

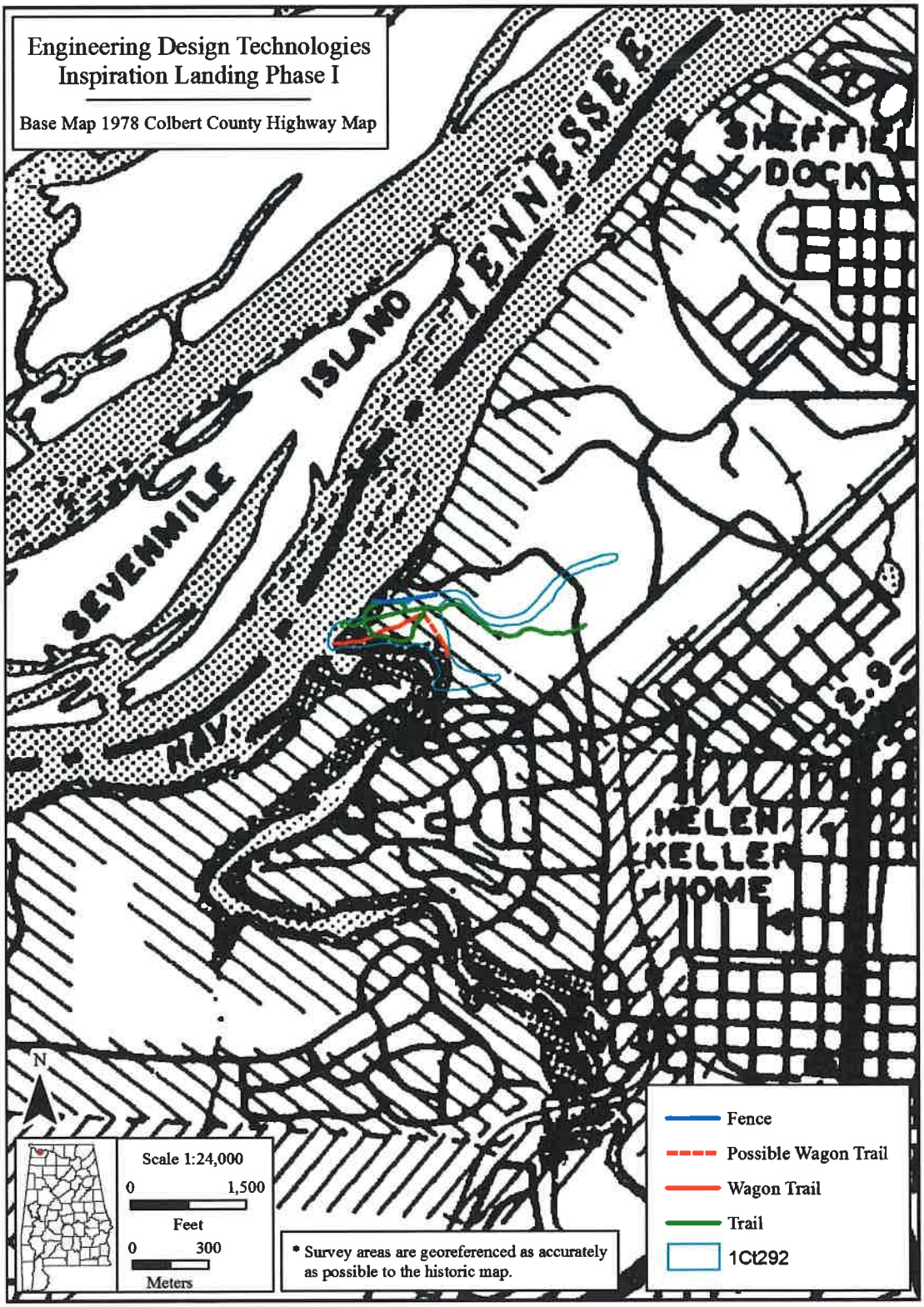

Figure 35. 1978, Colbert County Highway Map showing the more recent development near the APE (UA Cartographic Research Library 2017).

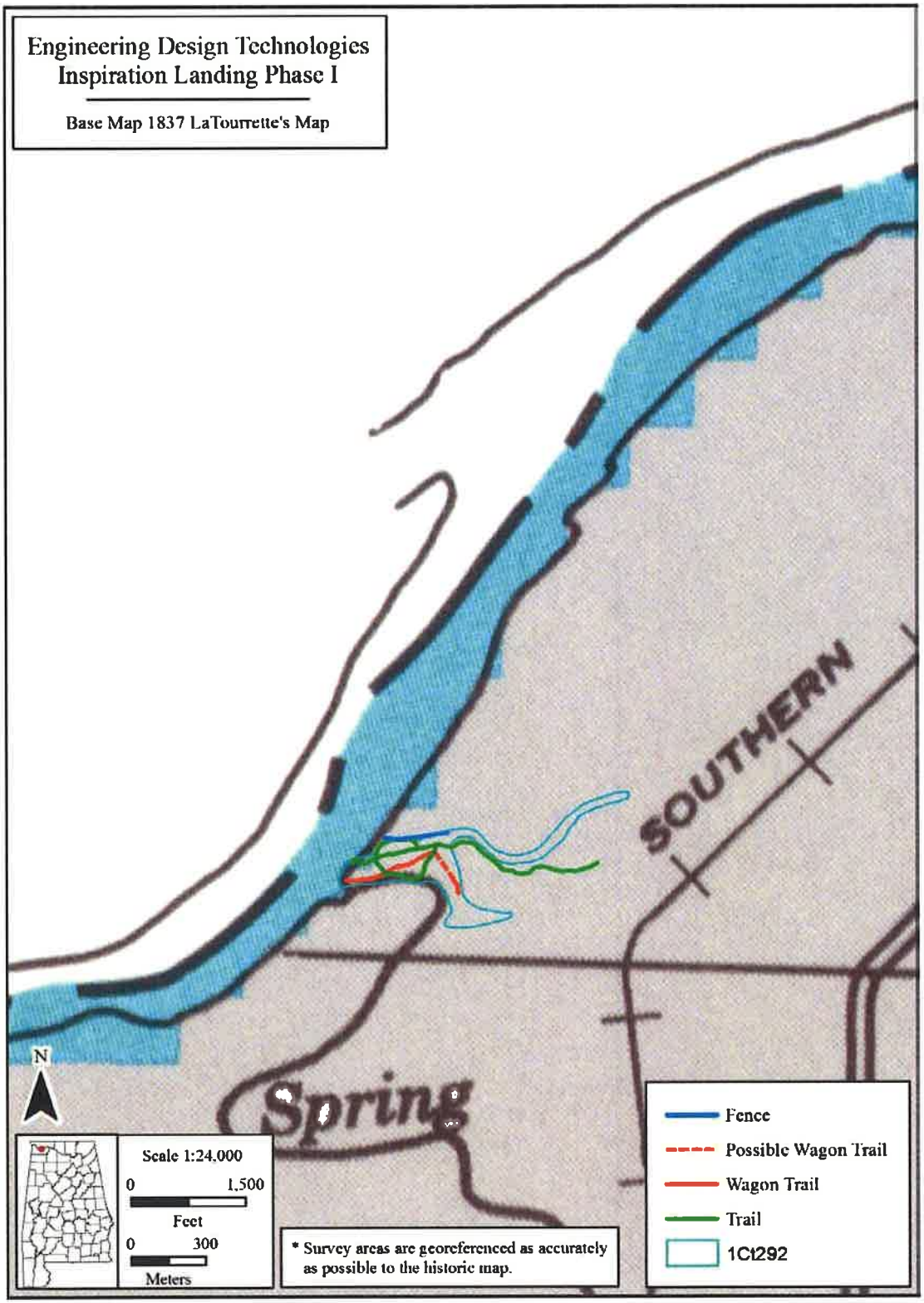

Figure 36. 1980, USDA Soil Map showing the APE as undeveloped and adjacent to a railroad line just prior to the development of Park West (UA Cartographic Research Library 2017).

Literature and Document Search

For prior archaeological surveys conducted in the general area, the Alabama Cultural Resources Online Database, housed at OAR and consisting of the National Archaeological Database Bibliography, the Alabama State Site File (ASSF) (OAR 2019), and the Alabama Phase I Surveys Website (OAR 2014) were reviewed. Seven Phase I surveys were conducted in close proximity to the present survey area, although several additional studies have been completed as the surrounding sites have been investigated. Finally, *Cemetery Locations by County* lists no historic cemeteries located within the survey tract (Remington 2008). However, a geophysical survey of Tuscumbia Landing conducted by Southeastern Anthropological Institute from 2010-2011 revealed 17 possible graves and confirmed the presence of nine structures (Figures 37 and 38). No further investigation was done to verify that the anomalies were in fact burials, but they are very likely the graves of the Native Americans that died while waiting for the ferry during the Trail of Tears in YEAR (King, Johnson, and Marshall 2012).

Between 1981 and 1983, Gregory Waselkov and Robert T. Morgan, both of Auburn University, completed a broad survey of the Seven Mile Archaeological District, owned by TVA, in order to fully characterize the range of sites present and to provide recommendations to TVA regarding their management. Waselkov and Morgan (1983) defined a cultural chronology for the Seven Mile Island Wildlife Management Area (SMIWMA) ranging from the Paleoindian (10,000 to 8,000 BC) through the Historic period (1750 to present) and identified and revisited 80 sites, many of which were multicomponent. Waselkov and Morgan (1983) recommended likely research potential associated with each occupational period and identified erosion and illegal looting as primary threats to known sites within SMIWMA. They recommended that the Seven Mile Island National Register district boundaries be adjusted to accommodate new site boundaries, that Coffee Slough be separated from the Seven Mile Island NRHP district, and that a third district be defined to include Site 1Ct8 and the south bank of the Tennessee River between Spring Creek and Pride Landing (Waselkov and Morgan 1983). The Waselkov and Morgan (1983) survey extended along the right bank of the Tennessee River and within the water way itself, and is therefore adjacent to, but not within, the APE. Sites within the Waselkov and Morgan (1983) survey area within the one mile radius of the APE include 1Lu13, 1Lu15-1Lu16, 1Lu112-1Lu114, 1Lu116, ,1Lu22, 1Lu25, 1Le226-1Lu229, 1Lu260-1Lu273, 1Lu275-1Lu277, 1Lu328-1Lu330, 1Lu685, and 1Lu686.

During three field seasons (1986, 1987, and 1990), the University of Alabama conducted an archaeological inventory of the Pickwick Reservoir that included both riverine and upland sites within TVA property boundaries (Meyer 1995). Both 1Ct291 (an eroded Woodland period shell midden) and 1Ct292 (Tuscumbia Landing) were recorded during the 1990 field season. At that time 1Ct292 was referred to as a "small lithic scatter associated with the Middle Paleoindian and Early, Middle and Late Archaic" (Meyer 1995:161). This site was capped by clay in the early 19th century during construction of the landing to help mitigate erosion from flood waters. Other investigated during this survey within one mile of the survey include sites along the Sheffield shoreline include 1Ct53-54, 1Ct115, 1Ct139, 1Ct289-290, 1Lu13, 1Lu15-16, 1Lu22, 1Lu25, 1Lu112-114, 1Lu116, 1Lu227-230, 1Lu260-270, 1Lu277, 1Lu328-330, 1Lu332, and 1Lu336. Between 2003 and 2005 TRC conducted a comprehensive archaeological and geoarchaeological investigation of four study areas just downstream from Wilson Dam to define site boundaries, identify new cultural resources, and assess their significance through systematic shovel testing (Stanyard et al 2005). None of these four areas included the APE but a recommendation that Tuscumbia Landing not be a priority for riprap erosion control was made. All archaeological sites within the one-mile radius of the APE on Seven Mile Island were shovel tested during this survey. The geoarchaeological portion of the

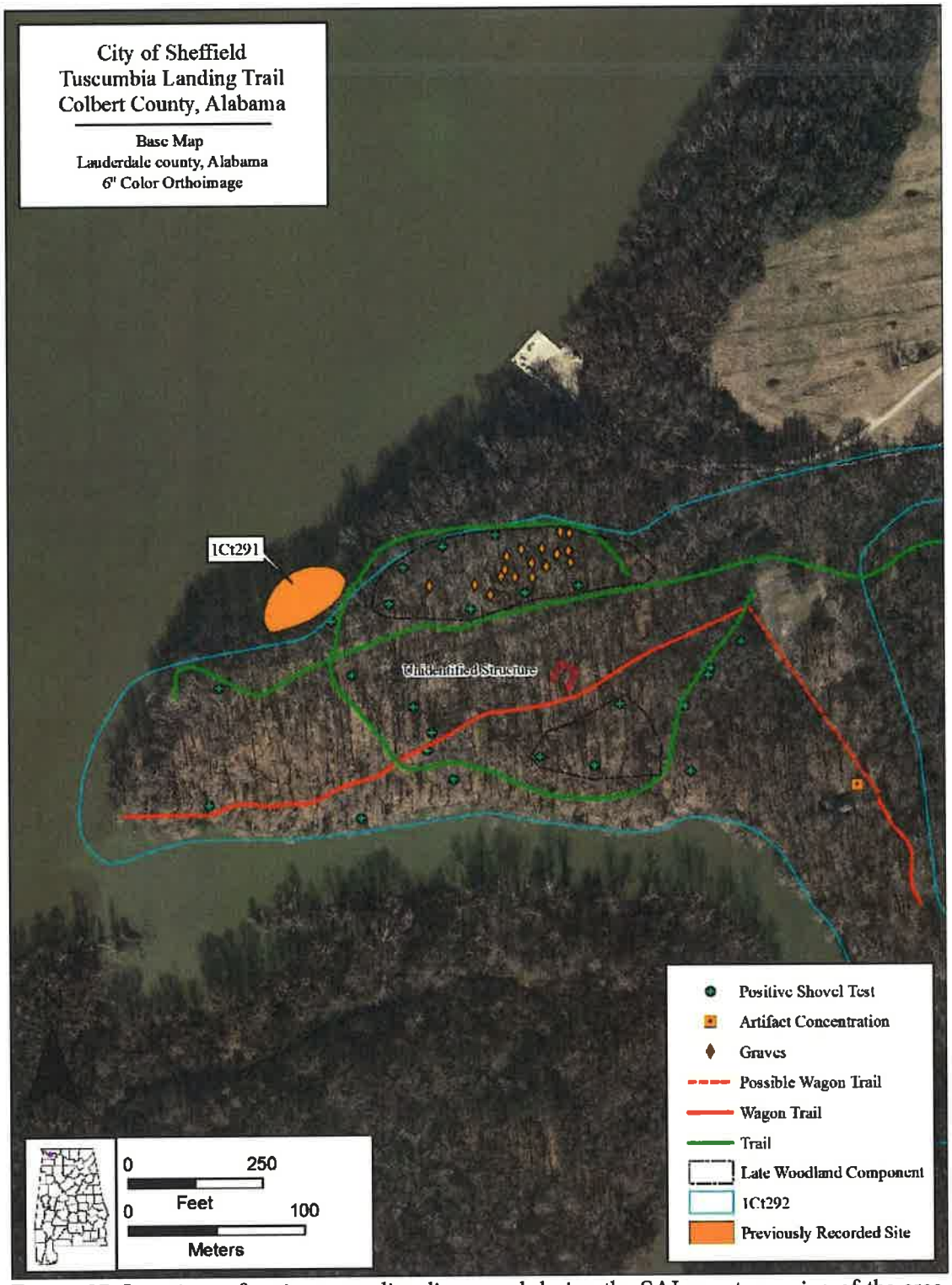

Figure 37. Locations of major anomalies discovered during the SAI remote sensing of the area, including a three-sided structure and several probable shallow graves (King, Johnson, and Marshall 2012).

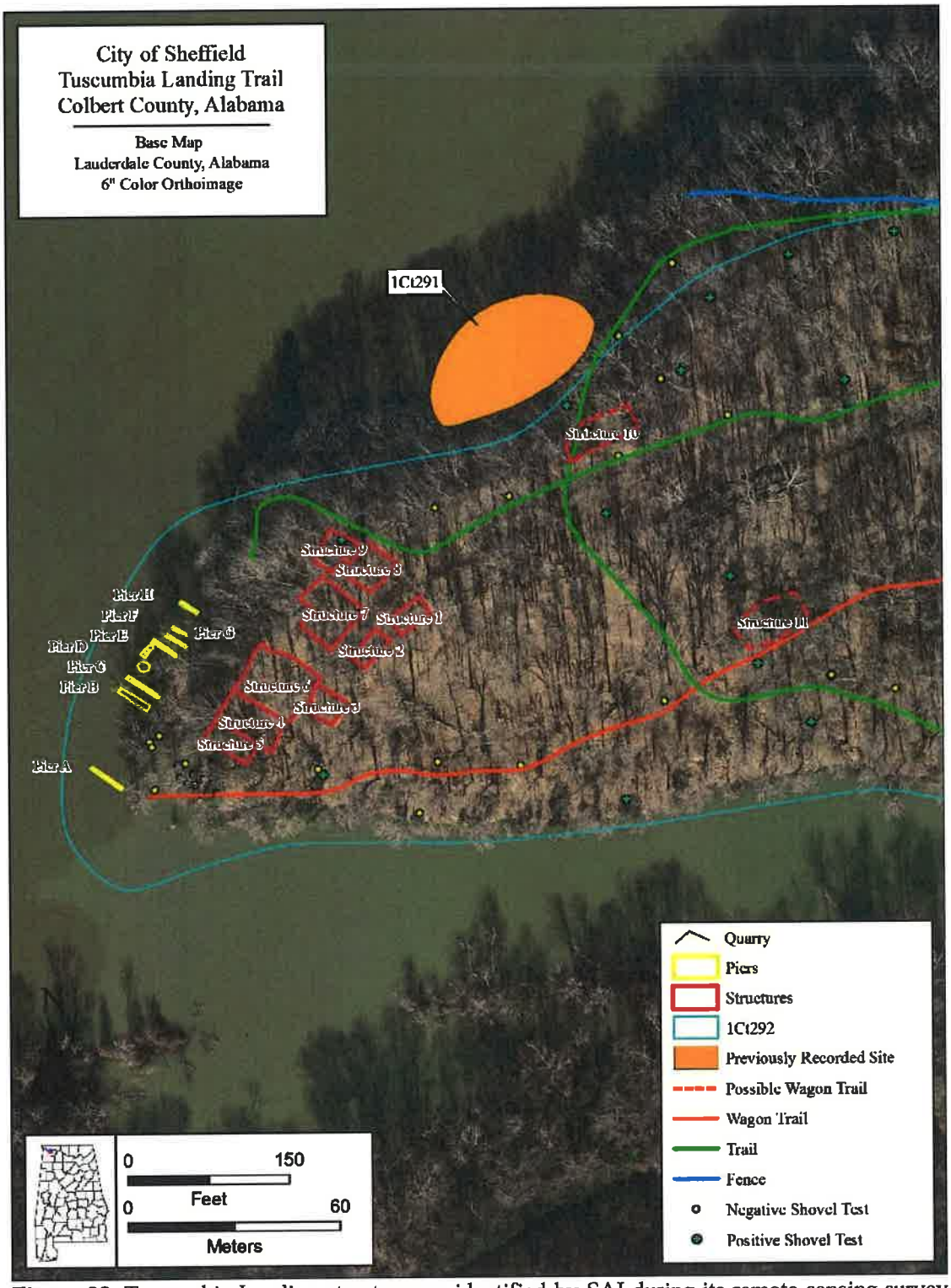

Figure 38. Tuscumbia Landing structures as identified by SAI during its remote sensing survey and two additional potential structure locations (King, Johnson, and Marshall 2012).

report concluded that there was moderate to very high potential for deeply buried sites on 95 percent of the study area. An additional study by TRC was conducted before and after the previous survey (2002-2003 and 2005-2006) for TVA to test the degree of erosion that was impacting archaeological sites on Seven Mile Island in anticipation of the increased water flow from the updated hydroturbines that were being installed at Wilson Dam (Stanyard et al. 2006). Kim Morley and Artis West performed a cell tower survey in 2007 in which no resources were found. The most recent surveys were conducted by OAR for the City of Sheffield in advance of a multiple section development in along the Tennessee River of which the current survey also addresses (Persons 2017). In 2017, Dr. Persons surveyed two rights of way. Two sites (1Ct638 and 1Ct639) were located during this survey and one isolated find. Site 1Ct638 consisted of an early twentieth century well monitoring point or sewer access point. Site 1Ct639 consisted of a light early twentieth century artifact scatter. The isolated find was a single shovel test that contained modern trash and was likely associated with modern push piles. Finally, Dr. Persons conducted a survey of 85 acres as part of the same development (Persons 2018a). Two new sites (Site 1Ct640 and 1Ct641) were located during this investigation. Site 1Ct640 is the remnants of the Cole Furnace consisting of eighteen historic features from this late nineteenth to early twentieth blast furnace. This site was considered eligible for NRHP listing under Criterion D. Site 1Ct641 was found to be a light surface scatter of artifacts dating to the early 20th century amidst a very disturbed context and was not considered eligible. During this survey Site 1Ct638 was revisited and found to be a much larger site consisting of the structural remnants of the Lady Ensley blast furnace and auxiliary structures which made this site eligible for NRHP listing. Additional studies conducted in the vicinity of the APE include a 1976 letter report of Charles Hubbert, and subsequent investigations conducted by the Southeastern Archaeological Institute under the direction of Gail King, including a study of forts and camps associated with Cherokee Removal (King, Marshall, Smith, and Wren 2009) and a study of the Tuscumbia, Courtland, and Decatur Railroad and its role in Cherokee Removal (King, King, Marshall, and Smith 2009). In 2018, OAR conducted a state level architectural documentation of 16 features at the Lady Ensley site (1Ct638) and 24 features at the Cole Furnaces site (1Ct640) (Persons 2018b).

The ASSF shows 54 archaeological sites within one mile of the APE (OAR 2019) (Figure 39; Table 3). Of these, seven are of undetermined eligibility (1Ct53, 1Ct54, 1Ct115, 1Ct189, 1Ct392, 1Ct393, and 1Lu22); one is ineligible (1Ct624); four are recommended ineligible (1Ct290, 1Ct291, 1Ct394, and 1Ct292); eight are recommended eligible (1Lu326, 1Lu327, 1Lu328, 1Lu329, 1Lu330, 1Lu332, 1Lu624, and 1Lu686), and 30 are listed on the NRHP (Meyer 1995; Waselkov and Morgan 1983). The majority of the undetermined sites consists of lithic scatters and a single shell mound (1Lu22). The ineligible site consists of a disturbed lithic scatter (1Ct624), while the sites recommended as ineligible consist of a heavily eroded multicomponent site (1Ct290), an eroded bluff shelter (1Ct291), and disturbed sites of unknown cultural association (1Ct394 and 1Ct292) (Meyer 1995; Waselkov and Morgan 1983). Sites that are recommended eligible include a lithic scatter and shell midden (1Lu118), extensive lithic scatters adjacent to sloughs (1Lu326, 1eLu327, 1Lu328 and 1Lu329), sites with potentially deeply buried strata (1Lu330), a lithic scatter (1Lu332), and large multicomponent sites (1Lu685, 1Lu686).Of the NRHP-listed sites within one mile of the APE, 29 of the 30 are located within the Seven Mile Island Archaeological District (Meyer 1995; Waselkov and Morgan 1983). These sites include a number of sites that figure prominently in our understanding of shell mounds, Archaic subsistence and social organization, gender roles, burial practices, and bioarchaeology, and these sites contributed significantly to our understanding of the overall chronology of the area. Site 1Lu25 (the Perry site) is particular notable, as it has drawn considerable attention over the years (Allsbrook et al. 1997; Claassen 1996; DeJarnette 1938a, 1938b, 1938c, 1939a, 1939b, 1939c, 1940a, 1940b, 1940c, 1941, 1942; Dye and Galm 1986; Futato 1986, 2002; Lewis and Kneberg 1959; McKenzie 1965; Meeks 1999; Miller 1950; Moore 1915; Peebles 1971; Romfh 1970; Snow 1940; Walthall 1981; Warren 2004; Webb and DeJarnette 1948, 1959). The remaining NRHP-listed site is 1Ct570, also known as Ivy Green, the birthplace of Helen Keller, constructed in 1820 (Freeman 2005).

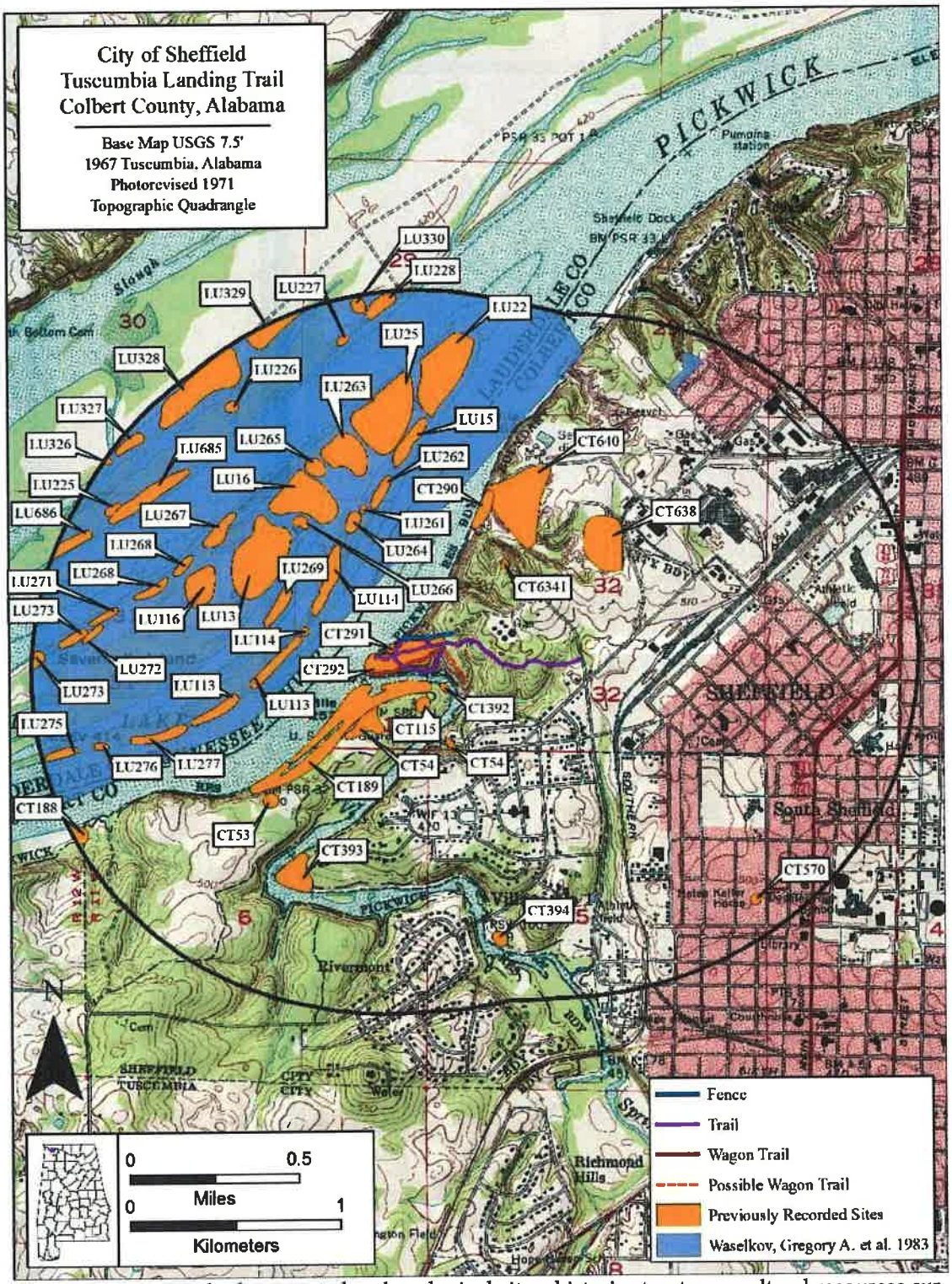

Figure 39. Previously documented archaeological sites, historic structures, cultural resources surveys, Alabama Register properties, NHL listings within 1 mile of the APE.

Table 3. Previously recorded sites within one mile of the project area.

ASSF/Site Name	T	R	Section	Type of Site	Component	Notes	Reference on File	NRHP Status
1Ct53	04S	11W	6		Unknown Aboriginal	Scatter of lithic material on the floodplain of the Tennessee below the mouth of Spring Creek	Meyer 1995	Undetermined
1Ct54	03S	11W	31		Unknown Aboriginal	Site on low ridge 400ft from TN River.	Meyer 1995	Undetermined
1Ct115	03S	11W	31		Unknown Aboriginal	Lithic workshop 1200 ft from Tennessee River, 1500 ft from Nitrate Plant No. 1. Originally referred to as 1Ct64.	Meyer 1995	Undetermined
1Ct188	03S	12W	31		Middle Paleoindian, Early Archaic, Middle Woodland, Mississippian	Large multicomponent site that Phase II testing \revealed to have intact cultural features.	Goldman-Finn 1995, Meyer 1995, Hawsey 2012	Recommended Eligible
1Ct189	03S	11W	31		Creek, Cherokee, Choctaw, 18th Century French	Low to moderate density scatter of lithic material on southern shore of TN River. Multicomponent site at confluence. Site of late 18th century trading town, Coldwater, occupied by French traders and Creek, Cherokee, and Choctaw warriors. Town was burned in 1792. Site extents nearly two miles up Spring Creek.	Meyer 1995	Undetermined
1Ct290	03S	11W	32		Limestone Tempered Sherds	Large multicomponent site on the south side of the TN River near Sheffield. Site consists of limestone tempered sherds and abundant lithics, which were disturbed by a pipeline trench dug in 1985. Most of site is inundated or eroded.	Meyer 1995	Recommended ineligible

Table 3. Previously recorded sites within one mile of the project area.

ASSF/Site Name	T	R	Section	Type of Site	Component	Notes	Reference on File	NRHP Status
1Ct291	03S	11W	31	Midden, Shell Midden	Limestone Tempered Sherds	Small, but dense, bluff shelter. Site would have been 20m from the river prior to inundation. Site is now being eroded. Shell midden is visible at upper end of site along with lithics and ceramics.	Meyer 1995	Recommended ineligible
1Ct392	03S	11W	32	Artifact Scatter	Unknown Aboriginal	Sparse artifact deposit consisting of chert flakes and biface fragments. One possible Late Archaic PP/K recovered.	Spry and Hollis 1997	Undetermined
1Ct393	04S	11W	6	Artifact Scatter	Unknown Aboriginal	Moderate scatter of chert lithic debris on toe end of a ridge spur. Pit features possibly observed on surface. Possibly disturbed.	Spry and Hollis 1997	Undetermined
1Ct394	04S	11W	5	Artifact Scatter	Unknown Aboriginal	Light lithic scatter of lithic debris. Disturbed by borrow pit excavation for use in adjacent recreational park.	Spry and Hollis 1997	Recommended ineligible
1Ct638	03S	11W	32	Structural Remnants	Late 19th-Early 20th Century	Lady Ensley Blast Furnace and Nitrate Plant No. 1 foundation remnants	Persons 2017	Eligible
1Ct639	03S	11W	32	Artifact Scatter	Early 20th Century	Light early 20th Century artifact scatter amid disturbed terrain	Persons 2017	Recommended ineligible
1Ct640	03S	11W	32	Structural Remnants	Late 19th – Early 20th Century	Cole Blast Furnace foundation remnants	Persons 2018a	Eligible
1Ct641	03S	11W	32	Artifact Scatter	Late 19th – Early 20th Century	Artifacts found amid disturbed remains	Persons 2018a	Recommended ineligible
1Lu13	03S	11W	31		Pottery Sherds	5-acre site located in a cotton field. Consists of a dense artifact scatter and a mound	Meyer 1995; Moore 1915; Waselkov and Morgan 1983; Stanyard et al. 2005	Listed
1Lu15	03S	11W	29	Shell Midden	Unknown Aboriginal	Low mound composed of black	Meyer 1995; Waselkov	Listed

Table 3. Previously recorded sites within one mile of the project area.

ASSF/Site Name	T	R	Section	Type of Site	Component	Notes	Reference on File	NRHP Status
						soil, shell, and debris.	and Morgan 1983	
1Lu16	03S	11W	32		Unknown Aboriginal	Concentration of flint chips, a large mill rock, and one pestle.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu22	03S	11W	29	Shell Midden	Pottery Sherds	Originally described as a shell mound on the south bank of Seven Mile Island. Redefined during subsequent survey and now Sites 1Lu22, 1Lu23, and 1Lu24 and now considered a single site, 1Lu22.	DeJarnette 1942; Meyer 1995; Moore 1915; Stanyard et al. 2005; Waselkov and Morgan 1983	Undetermined
1Lu25 or the Perry site	03S	11W	29	Features, Midden, Shell Midden	Benton, Ledbetter, Little Bear Creek, Steatite Sherds, Sandstone Sherds, Wheeler, Alexander, Colbert, Copena, McKelvey I Phase, McKelvey II Phase, Kogers Island Phase, McKee Island Brushed	Large shell mound and one of the largest single site excavations programs ever conducted.	Allsbrook et al. 1997; Claassen 1996; DeJarnette 1938a, 1938b, 1938c, 1939a, 1939b, 1939c, 1940a, 1940b, 1940c, 1941, 1942; Dye and Galm 1986; Futato 1986, 2002; Lewis and Kneberg 1959; McKenzie 1965; Meeks 1999; Miller 1950; Moore 1915; Peebles 1971; Romfh 1970; Snow 1940; Walthall 1981; Warren 2004; Webb and DeJarnette 1948, 1959;	Listed
1Lu112	03S	11W	31	Shell Midden	Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu113	03S	11W	31	Shell Midden	Unknown Aboriginal	Shell mound	Meyer 1995; Waselkov and Morgan 1983	Listed

Table 3. Previously recorded sites within one mile of the project area.

ASSF/Site Name	T	R	Section	Type of Site	Component	Notes	Reference on File	NRHP Status
1Lu114	03S	11W	32	Shell Midden	Unknown Aboriginal	Shell mound locate don bank of Seven Mile Island. Resurvey combined 1Lu114 and 1Lu115 into 1Lu114.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu116	03S	11W	31		Unknown Aboriginal	Recorded in 1937 by TVA survey but site boundaries enlarged during 1983 Auburn survey.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu225	03S	11W	31		Grog Tempered Sherds	Scatter of grog tempered pottery exposed by a drainage ditch.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu226	03S	11W	30		Unknown Aboriginal	Site is visible in cut banks of a drainage ditch. Materials are spare an in clay. No info on depth of deposits	Waselkov and Morgan 1983	Listed
1Lu227	03S	11W	29	Shell Midden	Kirk Corner Notched	Located on north shore of river below upper end of Seven Mile Island. Site consists of a shell midden on a high vertical bank. Also lithic scatters at the base of the shell midden in association with Kirk Corner Notched PP/K.	Fay 1987; Meyer 1995; Waselkov and Morgan 1983; Thorne 1985	Listed
1Lu228	03S	11W	29		Greenbrier, Kirk Corner Notched	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu260	03S	11W	32		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu261	03S	11W	32		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu262	03S	11W	29		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu263	03S	11W	29		Unknown Aboriginal	Site located on interior of Seven Mile Island near upper and easternmost end.	Meyer 1995; Waselkov and Morgan 1983	Listed

Table 3. Previously recorded sites within one mile of the project area.

ASSF/Site Name	T	R	Section	Type of Site	Component	Notes	Reference on File	NRHP Status
1Lu264	03S	11W	32		Unknown Aboriginal	Site located on interior of Seven Mile Island near upper and eastern-most end.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu265	03S	11W	29		Unknown Aboriginal	Site located in interior of Seven Mile Island toward north side of island.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu266	03S	11W	32		Unknown Aboriginal	Site located in interior of Seven Mile Island toward north side of island.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu267	03S	11W	31	Shell Midden	Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu268	03S	11W	31		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu269	03S	11W	31		Unknown Aboriginal	Site located in interior of Seven Mile Island and is seasonally flooded by a large slough.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu270	03S	11W	31		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu271	03S	11W	31		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu272	03S	11W	31		Unknown Aboriginal	Located on higher ground near the northern edge of the island, but not adjacent to the river.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu273	03S	11W	31		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu275	03S	12W	31		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu276	03S	11W	31		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed
1Lu277	03S	11W	31		Unknown Aboriginal	No info in ASSF.	Meyer 1995; Waselkov and Morgan 1983	Listed

Table 3. Previously recorded sites within one mile of the project area.

ASSF/Site Name	T	R	Section	Type of Site	Component	Notes	Reference on File	NRHP Status
1Lu326	03S	11W	30		Unknown Aboriginal	Site consists of a lithic scatter eroding at the waters edge on a low knoll extending into the backwater slough area and is completely forested.	Meyer 1995	Recommended eligible
1Lu327	03S	11W	30		Unknown Aboriginal	Site was located on the surface in a small cultivated field and consisted of FCR, debitage and shatter within the plowzone.	Meyer 1995	Recommended eligible
1Lu328	03S	11W	30		Unknown Aboriginal	Site is within a cultivated field and extends 2 or more miles in length. Site occupies high ground atop a second terrace above the TN River, extending from a backwater slough. Consists of light to moderate scatter of lithics.	Meyer 1995	Recommended eligible
1Lu329	03S	11W	30		Unknown Aboriginal	Related and possibly contiguous with 1Lu328. Site consists of a lithic scatter within a cultivated terrace of a natural levee.	Meyer 1995	Recommended eligible
1Lu330	03S	11W	29		Unknown Aboriginal	A low density lithic scatter within a cultivated field. Site is very disturbed by plowing, although the possibility remains of deeply buried strata.	Meyer 1995	Recommended eligible
1Lu332	03S	11W	29		White Springs, Wade	Low density scatter of lithics near the slough on a slight rise in a field. Recovery consisted of heat-treated flakes and FCR.	Meyer 1995	Recommended eligible
1Ct570 or Ivy Green	04S	11W	5	Historic Structure (standing)	19th Century and 20th Century Nonaborigi-nal	Birthplace of Helen Keller, construction in 1820.	Freeman 2005	Listed

Table 3. Previously recorded sites within one mile of the project area.

ASSF/Site Name	T	R	Section	Type of Site	Component	Notes	Reference on File	NRHP Status
1Lu685	03S	11W	30	Features, Midden	Pottery Sherds	590m site crosses an artificial drainage constructed during historic times. Recovered ceramics, lithics, and fauna. Diagnostic materials suggest Late Archaic/Gulf Formational period, Late Woodland, Middle Woodland, and possibly Mississippian occupation. Site contains intact deposits, with heavy occupation during the Late Archaic/Gulf Formational.	Stanyard, et al. 2006	Recommended eligible
1Lu686	03S	11W	31	Deeply buried intact deposits	Woodland, Mississippian	During testing, 12 50cm test units revealed a moderate – high density site with limestone and grog tempered pottery being the only diagnostic artifacts recovered.	Stanyard, et al. 2006	Recommended eligible
1Ct624 or JWR002	03S	11W	32	Artifact Scatter	Unknown Aboriginal	Site located on upland terrace to southeast of Spring Creek. Site is heavily modified by the construction of a US Coast Guard depot. Artifact recovery consisted of lithic debitage. Densest portion of the site may have been on the high ground, which has been largely destroyed.	None on file.	Ineligible

The proximity of so many resources from many time periods, the overarching historical narrative of the area, and the significant events that took place in the vicinity, would suggest that the Tuscumbia Landing site likely contains of a range of prehistoric chronological associations in addition to the known historic associations within the APE.

The NRHP (NPS 2016) and the *Alabama Register of Landmarks and Heritage* and related supplements (AHC 1978, 2017) list eight properties and historic districts within a one mile radius of the APE, including the Sheffield Railroad Depot, the Sheffield Residential Historic District, the Sheffield Downtown Commercial Historic District, Ivy Green, the Seven Mile Island Archaeological District, the Tuscumbia Landing site, the Tuscumbia Historic District, and the Nitrate Village No. 1 Historic District (Figure 40; Table 4). The Sheffield Railroad Depot, a 1948 railroad depot, was once located .4 mi from the APE, but is no longer extant. The Nitrate Village No. 1 Historic District, as discussed above, lies .3 mi south of the APE and consists of a planned residential community associated with 1918-era development of the town in association with the Nitrate Plant No. 1 , which was previously located within and immediately surrounding the APE. The NRHP-listed Seven Mile Island Archaeological District and the Ivy Green site were discussed above. The final site, Tuscumbia Landing, was listed on the NRHP in 1982 for recognition of the TC&D railroad and then incorporated into the Trail of Tears Multiple Property National Historic Landmark (NHL) in 2003.

A review of historic maps has been included in earlier sections of this report, as they reflect various developments in the vicinity of the APE over time, including the presence of the TC&D railroad, the development of the twentieth century Nitrate Plant No. 1, and the extensive activities related to the Trail of Tears and the Civil War which occurred within Tuscumbia Landing and the overall APE. As there was a high probability for encountering a range of prehistoric or historic resources during the survey, copies of these historic maps, when relevant, were printed for reference during the field survey.

Other instructive imagery includes Light Detection and Ranging (LIDAR) imagery, a remote sensing technology that measures distance to a target with a pulsated laser light, effectively providing reliable, three-dimensional information regarding the earth's surface. The LIDAR data presented here was acquired in 2011 (USGS Earth Explorer 2017) (Figure 41). The LIDAR data shows clearly the footprint of the former railroad connecting the ammonium nitrate crystallization buildings with the rest of Nitrate Plant No. 1, located approximately 1 km to the northeast. LIDAR in the APE also shows numerous built features of the modern environment, including pedestrian trails within Park West, parking areas, the existing roadway to access Park West, waterways crossing and adjacent to the APE, and paved parking areas adjacent to the roadway.

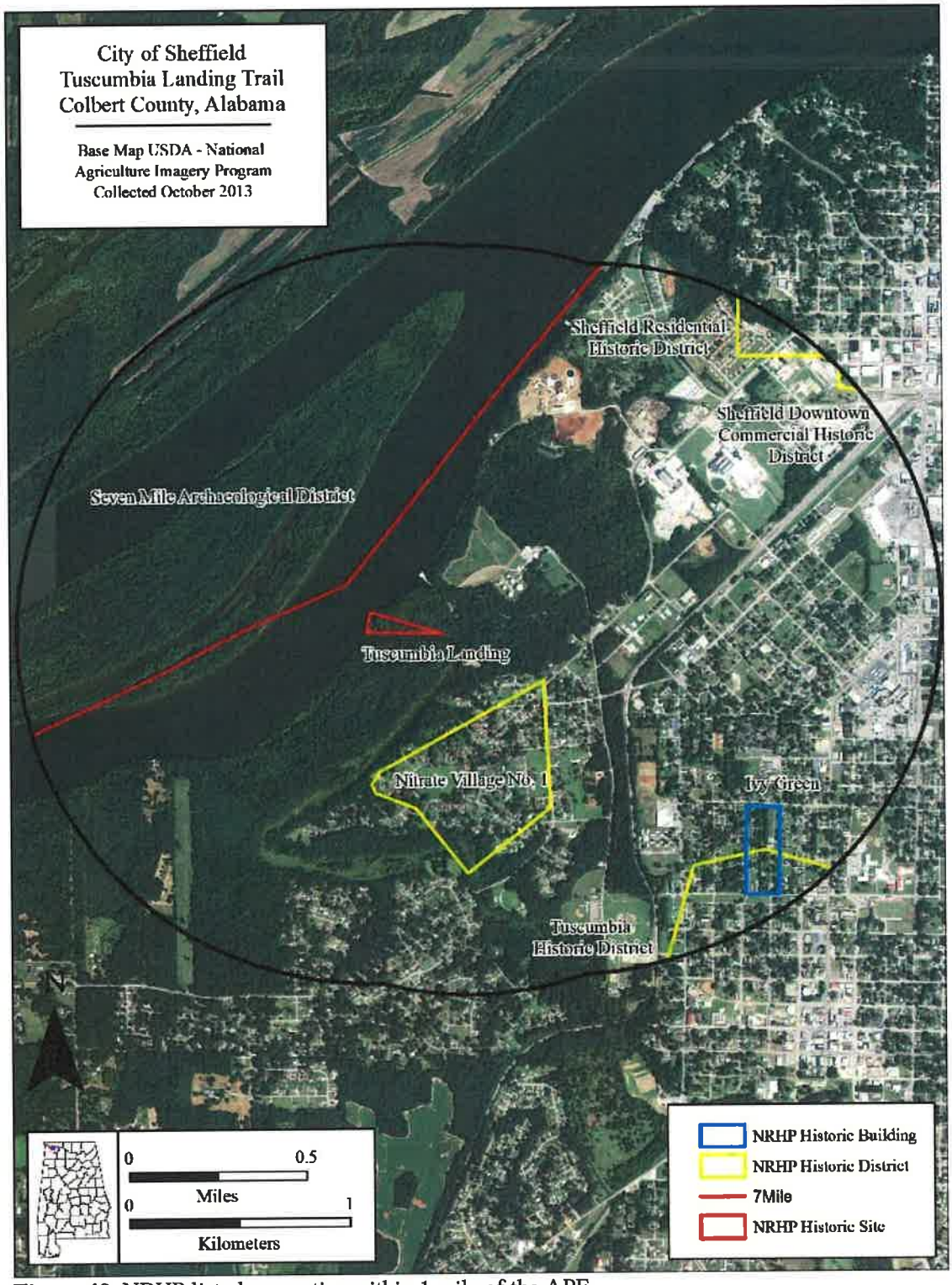

Figure 40. NRHP listed properties within 1 mile of the APE.

Table 4.Alabama Register of Historic Landmarks and National Register of Historic Places properties in the immediate vicinity of the APE.

Name	Location	Description	Distance from APE	Registry Listing
Sheffield Railroad Depot	Shop Pike	1948 Railroad depot. No longer extant.	.4 mi	Listed ARLH 1994
Sheffield Residential Historic District	Roughly bounded by Riverside Pk, River Bluff Dr., Wood, Third, Second Sts., 15th Ave., 27th St., and 19th Ave.	Residential district designed in 1886 by Civil Engineer Charles Boeckh deviating from strict adherence to rigid geometry.	.8 mi	Listed NRHP 2002
Sheffield Downtown Commercial Historic District	1st & 5th Sts., Pittsburgh & Columbia Aves.	Commercial buildings constructed from 1888-1959 representing Renaissance Revival, High Victorian Gothic, and Moderne architectural styles.	.9 mi	Listed NRHP 2010
Ivy Green	300 W. North Common	Birthplace of Helen Keller, construction in 1820.	.7 mi	Listed NRHP 1970
Nitrate Village No 1 Historic District	Various	1918 residential community for nearby Nitrate Plant No. 1	.1 mi	Listed NRHP 1984
Seven Mile Island Archaeological District	Seven Mile Island and surrounding areas	Archaeological District with occupation ranging from Paleoindian through European Colonial	.2 mi	Listed ARLH 2015
Tuscumbia Historic District	Roughly bounded by N. & E. Commons, Eight St. and Spring Rd., Hooks, W. 5th & S. Milton including Steel Bridge	Commercial and residential district including Tidewater, Greek Revival, Queen Anne, Folk Victorian, Bungalow, and Tudor architectural styles	.7 mi	Listed NRHP 1985
Tuscumbia Landing Site	Tennessee River at Spring Creek	Site of the Tuscumbia Railway (est. 1832), the first railroad west of the Appalachians, and a later Trail of Tears site during the removal of Native Americans from their ancestral lands. Also warehouse site for No. 1 Nitrate Plant No. 1and associated Tuscumbia, Courtland, and Decatur Railroad	Within the APE	Listed NRHP 1982 for Transportation and as part of the Trail of Tears Multiple Property National Historic Landmark (NHL) in 2011

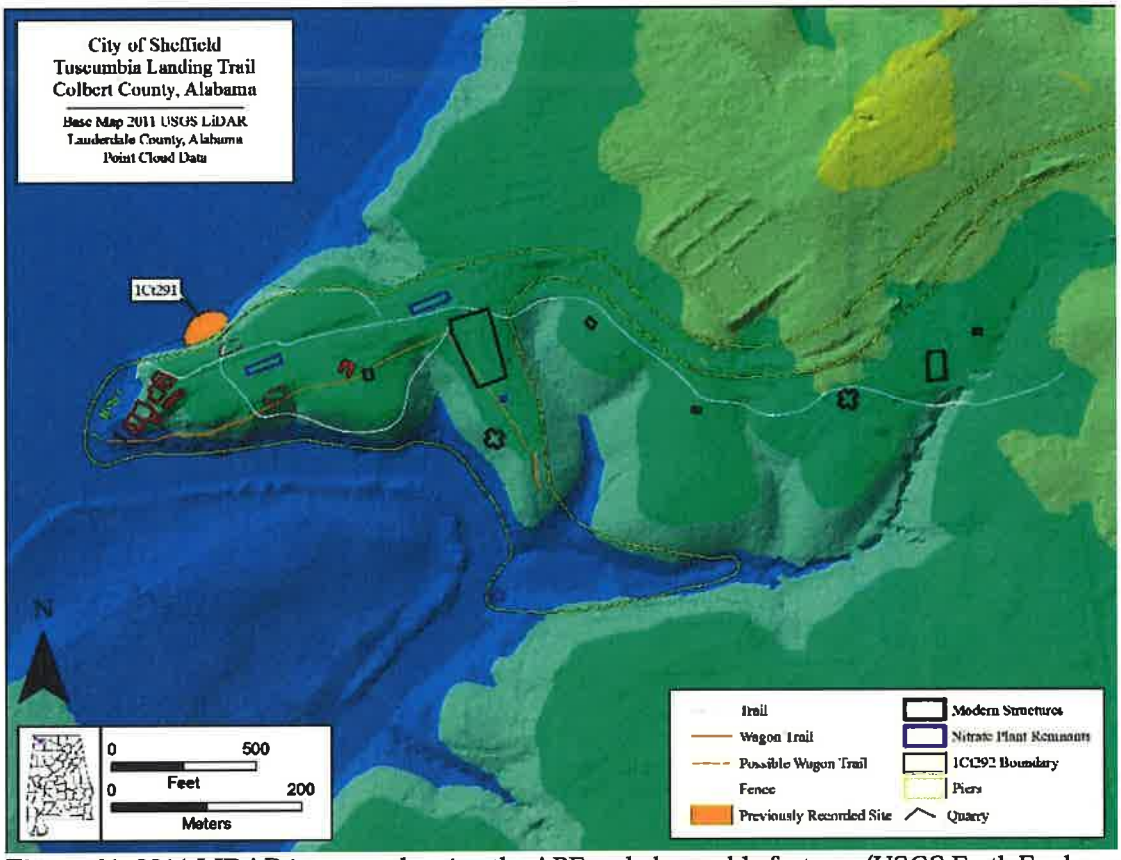

Figure 41. 2011 LIDAR imagery showing the APE and observable features (USGS Earth Explorer 2019).

Field Methods

Field investigations consisted of a pedestrian walkover of the proposed project area employing visual inspection of exposed ground surface and subsurface testing. Per AHC guidelines, all shovel tests had a minimum diameter of 30 cm and were excavated to recognizable, culturally sterile subsoil. All excavated soil was screened through 6.35 mm (.25 in) hardware cloth in an effort to recover cultural materials. Soil profiles were recorded for each shovel test noting soil colors, textures, and depths of soil texture/color changes and horizon boundaries. All shovel test locations were documented using global positioning systems units rated for sub-decimeter accuracy. A total of 69 shovel tests were excavated in the course of this survey to explore the subsurface conditions of the site and surrounding areas (Figures 42-45). Photographic documentation was undertaken to provide evidence of the varying environments and disposition of modern park buildings, trails, and historic foundation remnants within the project area. These photographs are keyed to the topographic maps showing their location and direction of capture (Figure 46).

Where exposed ground surface was present, initial investigations consisted of visual inspection. The locations included bare soil exposures along natural slopes, drainages, wagon road cutbanks, road surfaces, and erosional surfaces. Where hiking trails already existed and where acceptable trail paths were sought, shovel tests were excavated at 30 m intervals. Along sections of the remnant wagon road and at certain locations along existing trails, a leaf blower was used to expose any possible eroding artifact scatters. When features or potentially intact deposits were encountered the shovel testing area was expanded to find an acceptable route for the walking trails.

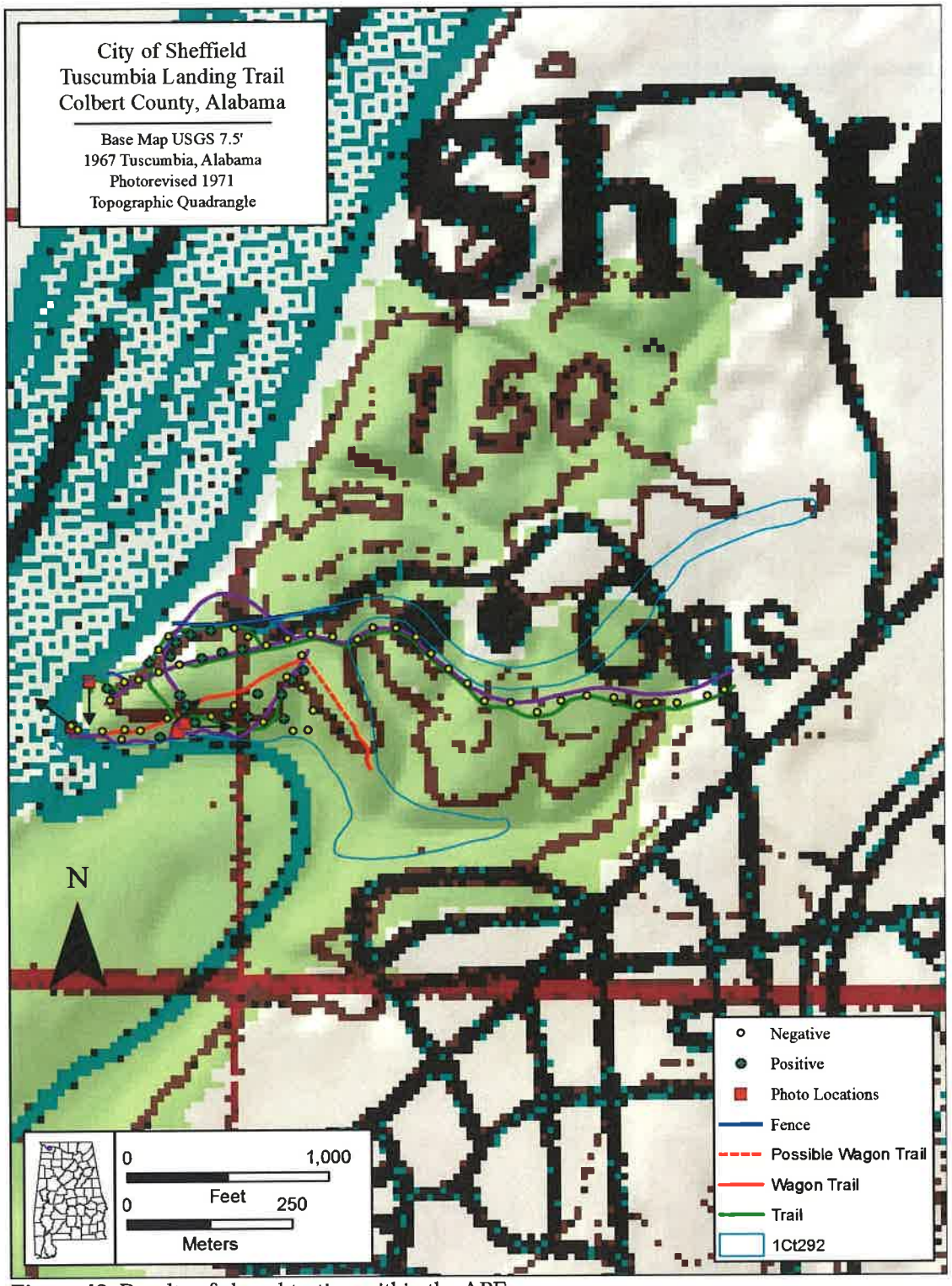

Figure 42. Results of shovel testing within the APE.

Figure 43. Shovel Test 42 showing the subsurface of the TC&D railroad berm.

Figure 44. Shovel Test 9 showing the subsurface conditions on the upper portion of the southern slope.

Figure 45. Limestone bedrock on the surface of the lower portion of the southern slope of Tuscumbia Landing. View northeast.

Laboratory Methods and Collection Curation

All cultural materials recovered during the project were transported to the David L. DeJarnette Archaeological Laboratory at Moundville Archaeological Park in Moundville, Alabama for processing and analysis. Laboratory analysis followed accepted standard procedures involving washing all recovered materials, sorting by class and category, and tabulation of all artifacts. During the analysis process, artifacts were placed into archival bags with provenience information and prepared for permanent curation. Information on all recovered artifacts and their proveniences has been entered into the OAR Artifact Database. Upon completion, all artifacts, photographs, field notes, maps, and documentation pertinent to the survey will be curated at the Erskine Ramsay Archaeological Repository located at Moundville Archaeological Park. This repository meets Department of the Interior Curation standards as defined under 36 CFR Part 79 and required by Chapter 460-x-9 of the Administrative Code of Alabama. A letter agreement for curation, as required by the AHC, has been included as Appendix A.

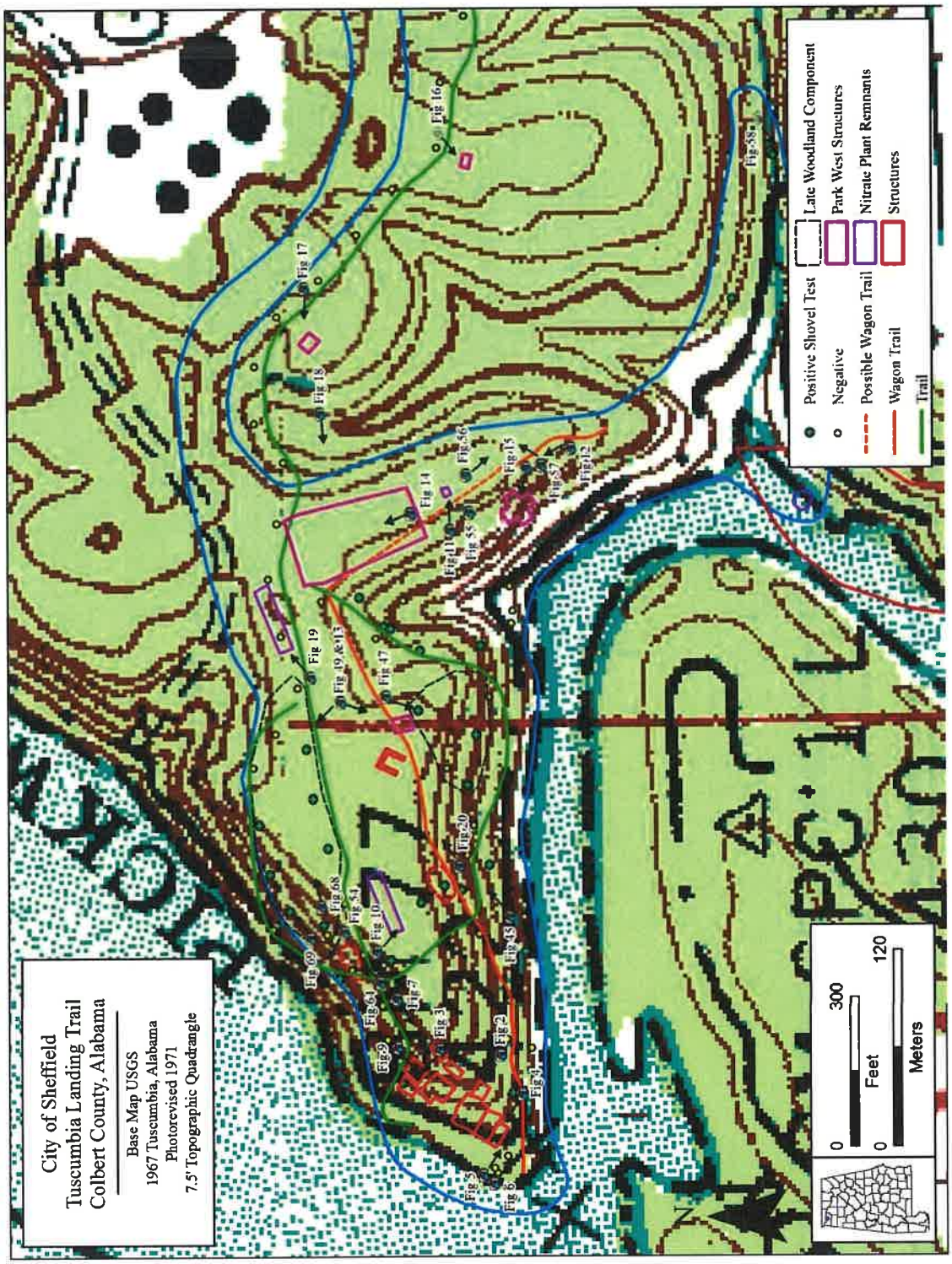

Figure 46. Photograph locations within the APE.

Results

As a result of the field investigations, much more is known about the subsurface conditions at Tuscumbia Landing and the extent of the Nitrate Plant No. 1 structural remnants within the APE. Since previous investigations have only gathered artifacts from the surface, the shovel testing from the current survey has started the process of locating the surface scatters and identifying intact buried deposits. The 69 shovel tests excavated within the proposed trail system revealed a varied subsurface environment that included areas disturbed by heavy construction, as well as intact historic and possibly intact prehistoric deposits. Of the 69 excavated shovel tests, 21 were positive for cultural material recovery. In addition, the historic features associated with Tuscumbia Landing documented by SAI were located in the field as well as two additional artificially leveled areas where structures associated with the landing could have stood. The three structural remnants identified by SAI as relating to Nitrate Plant No. 1 were also located and two new features identified. Newly identified features included a tiled concrete shower foundation, and series of square concrete pads. Subsurface testing also revealed previously unknown prehistoric occupation at the site, including both Middle Archaic and Late Woodland components. The Middle Archaic period component was located along the southernmost proposed trail, between the remnant wagon road and modern pavilion to the north and a steeper slope to the south. It received limited testing (Figures 47 and 48). In the vicinity of the potential Native American cemetery (Figure 49) along the northern proposed trail, shovel tests yielded multiple sherds of Late Woodland period pottery, indicating an occupation of the location prior to the 19th century cemetery likely associated with Indian Removal (Figures 50). In addition, there were multiple shovel tests downslope from the wagon road along the southern proposed trail that tested positive for cultural material (Figures 51-53). Some of those tests yielded early-mid 19th century artifacts such as black and olive glass mingled with debitage.

A pedestrian walkover with periodic leaf litter clearing east of Tuscumbia Landing resulted in the documentation of remnants of Nitrate Plant No. 1 in addition to the known ammonium nitrate crystallization buildings. These included several concrete pads, sewer access manholes, and a two-compartment, tiled concrete shower foundation (Figures 54-55). An additional section of the wagon road may be extant just to the south of the Park West parking lot (Figures 56-57). This possible road remnant seems to follow the sloping ridge over to a small, deep drainage where a potential crossing was located (Figure 58). The wagon road is obscured at the foot of the ridge by a nitrate plant sewer access road and a narrow nitrate plant footpath that ran to the nearby plant pumping station. These overlapping features seem to indicate that this possible wagon road remnant is from a time prior to the nitrate plant construction, likely dating to the nineteenth century use of the site. The pumping station along Spring Creek was initially built to supply water to the nitrate plant and was later repurposed by TVA as a malaria control base.

Figure 47. Level location of a Late Woodland period component near a Park West pavilion. View west.

Figure 48. Middle Archaic period and 19th century artifacts found just below possible Structure 11 levelled area.

Figure 49. Location of probable burial ground located by remote sensing. View northwest.

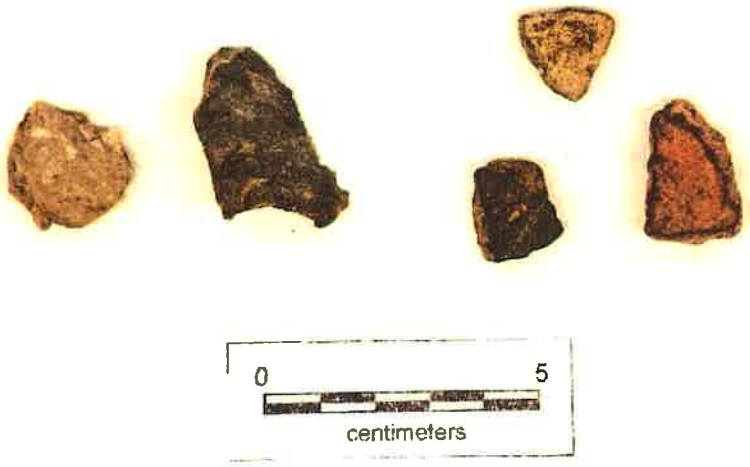

Figure 50. Late Woodland period Baytown Plain, *var. McKelvey* pottery and associated debitage found in shovel testing downslope from the probable burial ground.

Figure 51. Shovel Test 24 showing subsurface of a level area on the southern slope of Tuscumbia Landing that tested positive for prehistoric and historic artifacts.

Figure 52. Shovel Test 6 showing subsurface of a location just downslope and west of the primary Park West parking lot that contained early-mid 19th century artifacts.

Figure 53. Diagnostic historic artifacts and debitage found in Shovel Test 6 including black glass, Albany Slip stoneware, porcelain, and a large nail of uncertain type.

Figure 54. Brick sewer feature relating to Nitrate Plant No.1 on the upper portion of the north slope of Tuscumbia Landing. View north.

Figure 55. Steel pipe and drain in the tiled concrete foundation of Nitrate Plant No. 1 shower stalls. View east.

Figure 56. Convergence of the possible wagon trail remnant on the left and footpath on the right at a sparse artifact scatter south of the primary parking lot and west of a large pavilion. View south.

Figure 57. Possible wagon trail remnant outlined in blue. View northeast.

Figure 58. Possible wagon trail crossing remnant with a foundation stone and associated brick scatter on the opposite bank.

Site 1Ct292 – The Tuscumbia Landing Site

Topographic Map: 1971 Tuscumbia, AL
Township: 03S *Range*: 11W
Elevation: 414 ft AMSL
Surface Area: 4000 sq. m.
Natural Setting: Upland Slope
NRHP Status: Listed
Soil Type: Fullerton-Bodine Assoc.
Artifact Density: Light

Easting: 433550 *Northing:* 3845230
Section: 31-NW ¼ SE ¼ SE ¼
Site Size: 400 m by 100 m
Maximum Depth: 75 cmbs
Degree of Disturbance: 15%
Vegetative Cover: Secondary Growth, Open
Soil Texture: Silt Loam
Components: Late Paleoindian – Late Archaic, 19th-20th Century

Comments: The Tuscumbia Landing site (1Ct292) is a multicomponent site with identified occupations ranging from the Late Paleoindian to the early 20th century. Prior investigation at Tuscumbia Landing identified Late Paleoindian to Late Archaic prehistoric occupations along the shoreline and did not include any investigation to the east along the ridge (Meyer 1995). The 1830s era structural remains and deposits associated with the use of the site as a steamboat landing as well as the later utilization of the site by Union and Confederate Troops in 1862 and 1864 were initially documented by local historian Richard Sheridan (1980) and later by SAI during their remote sensing survey (King, Johnson, and Marshall 2012). The current survey recovered diagnostic artifacts indicating distinct Middle Archaic, Late Woodland, Mississippian, 19th century, and early 20th century occupations (Figures 59-60).

During the current project three new prehistoric components were identified and five new historic features were located. A total of 69 shovel tests were excavated, 21 of which were positive. The earliest prehistoric component consisted of one positive shovel test along the wagon road just south of the western-most nitrate plant building. The shovel test contained a McIntire and a Palmer PP/K. At the western end of Park West and just south of a pavilion shovel testing during this project indicated that there may be a partially intact Late Woodland period site just south of a wagon road remnant. This is based on the recovery of Baytown Plain, *var. McKelvey* pottery down to 40 cmbs in an area with no documentation of having been plowed (Figures 61-62). Four of the six shovel tests were positive for primarily prehistoric cultural material (Figure 63). Along the wagon road in this same general location was a possible foundation remnant of unknown origin detected by ground-penetrating radar between 7 cm and 46 cm below the surface (King, Johnson, and Marshall 2012). Just to the north of the Middle Archaic component, a shovel test conducted on a leveled area just above the same portion of the wagon road recovered Mississippi Plain pottery that indicated a Mississippian component.

There are artificially leveled areas for at least nine, and possibly eleven structures within the site that primarily date prior to the Civil War and constitute Tuscumbia Landing. Features associated with the prior warehouse facilities include limestone piers, limestone and brick foundations, limestone footers, brick and limestone steps and pathways, and artifact scatters. Features associated with the former TC&D railway include a large railroad berm and associated ditch. The majority of this area was outside the bounds of the current project. Within the project area there was a leveled area just to the north of the TC&D railroad berm that was certainly large enough for a building and just downslope a shovel test yielded historic artifacts including cut nails (Figure 64). On the south edge of the ridge is a smaller levelled area that could have supported the construction of a smaller building. However, the shovel test at this location revealed prehistoric debitage and shell tempered Mississippi Plain pottery while being absent of historic artifacts (Figure 65). Immediately adjacent to the wagon road and just downslope from this smaller leveled area an additional shovel test revealed a McIntire and a Palmer PP/K (Middle Archaic period) (Figures 66-67). Recovered cut nail types, including types 3 and 4, were free enough of rust concretions to identify as prior to 1840 (Wells 1989). Additional features identified on-site include the remains of a quarry, limestone piers along the shoreline, a wagon road leading up to the ridge from the landing, and the terminus of the TC&D Railroad.

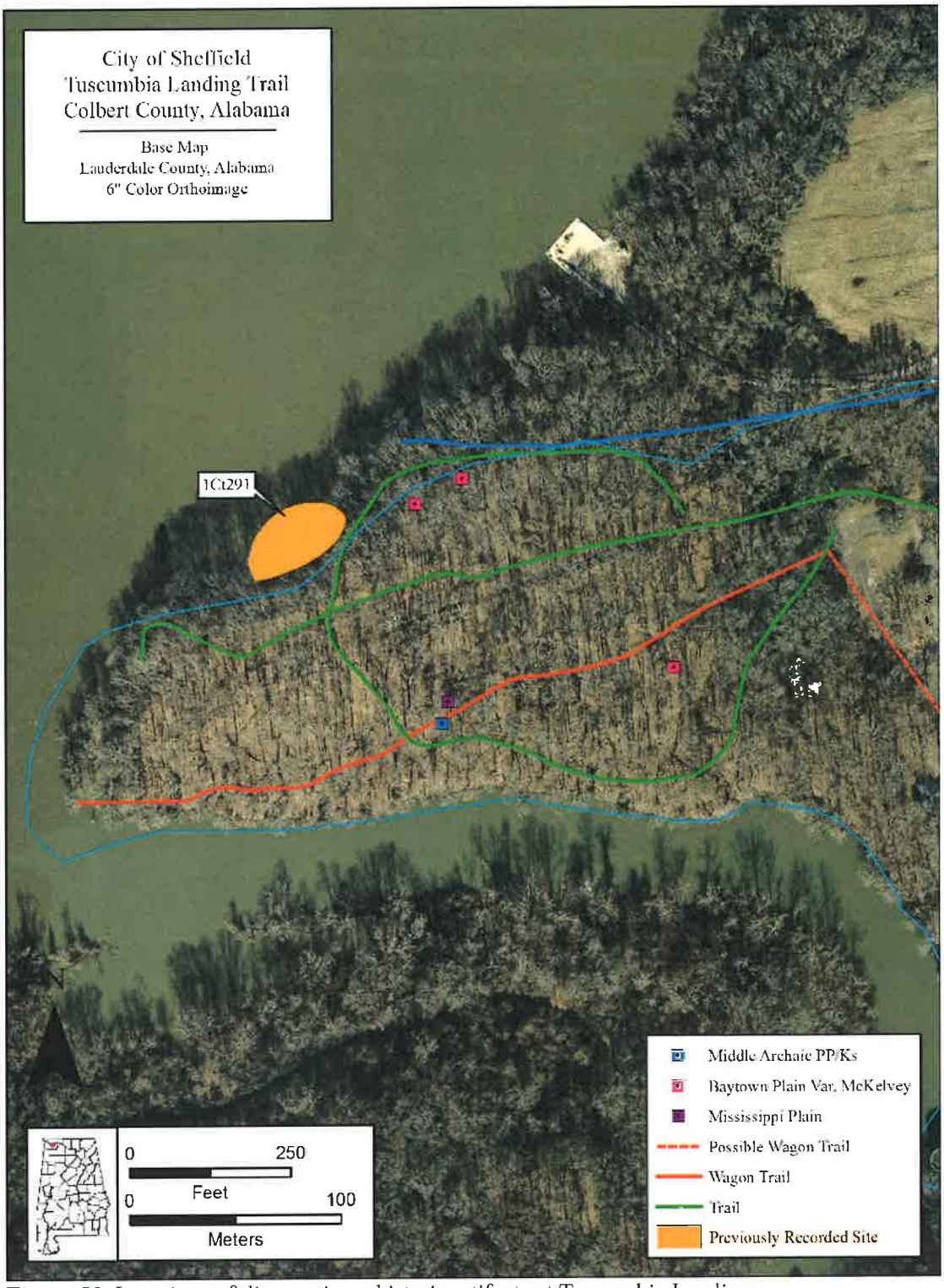

Figure 59. Locations of diagnostic prehistoric artifacts at Tuscumbia Landing.

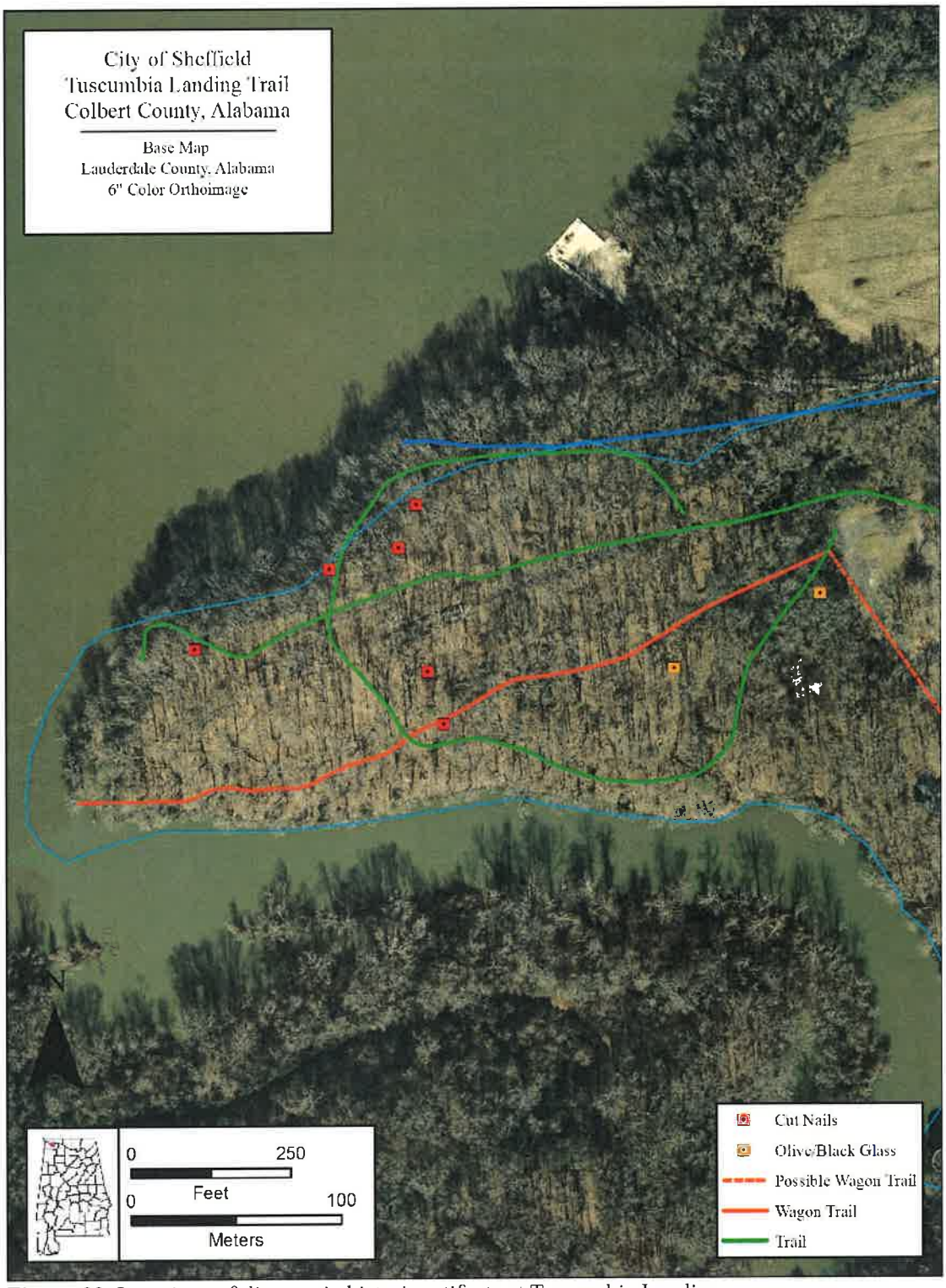

Figure 60. Locations of diagnostic historic artifacts at Tuscumbia Landing.

Figure 61. Shovel Test 17 showing depth of artifact recovery at the Late Woodland period and early-mid 19th century component near the pavilion.

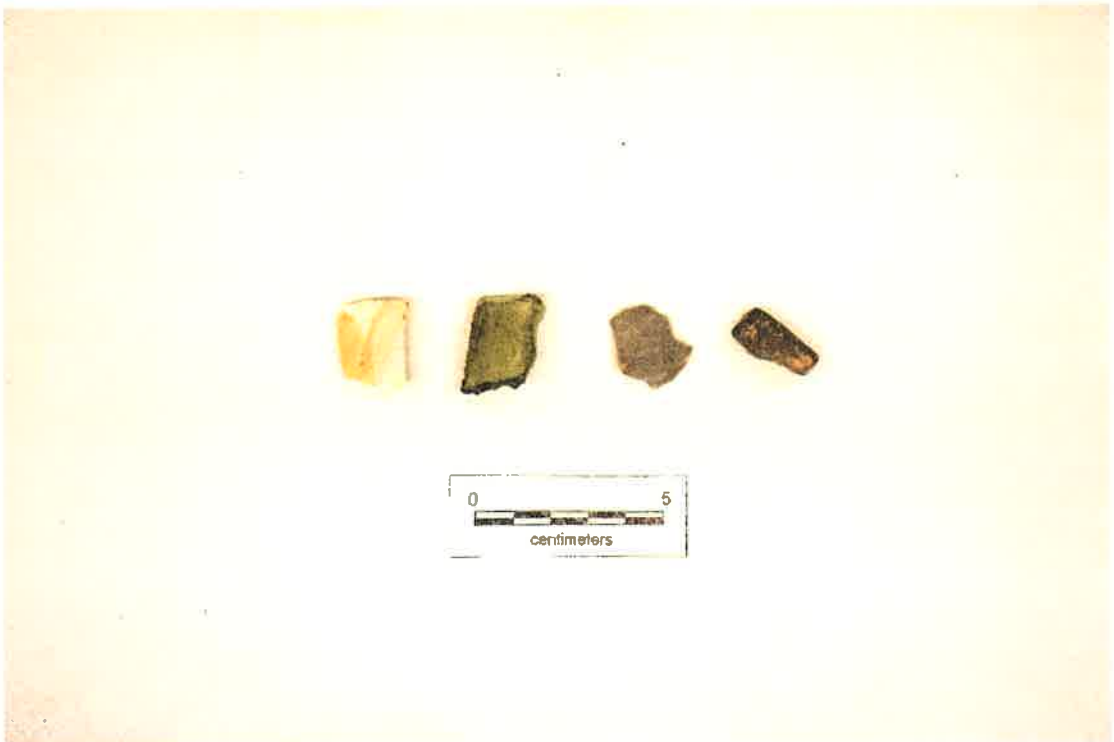

Figure 62. Diagnostic artifacts and debitage recovered for Shovel Test 17 including a Baytown Plain, *var. McKelvey* pottery rim, whiteware, and olive glass.

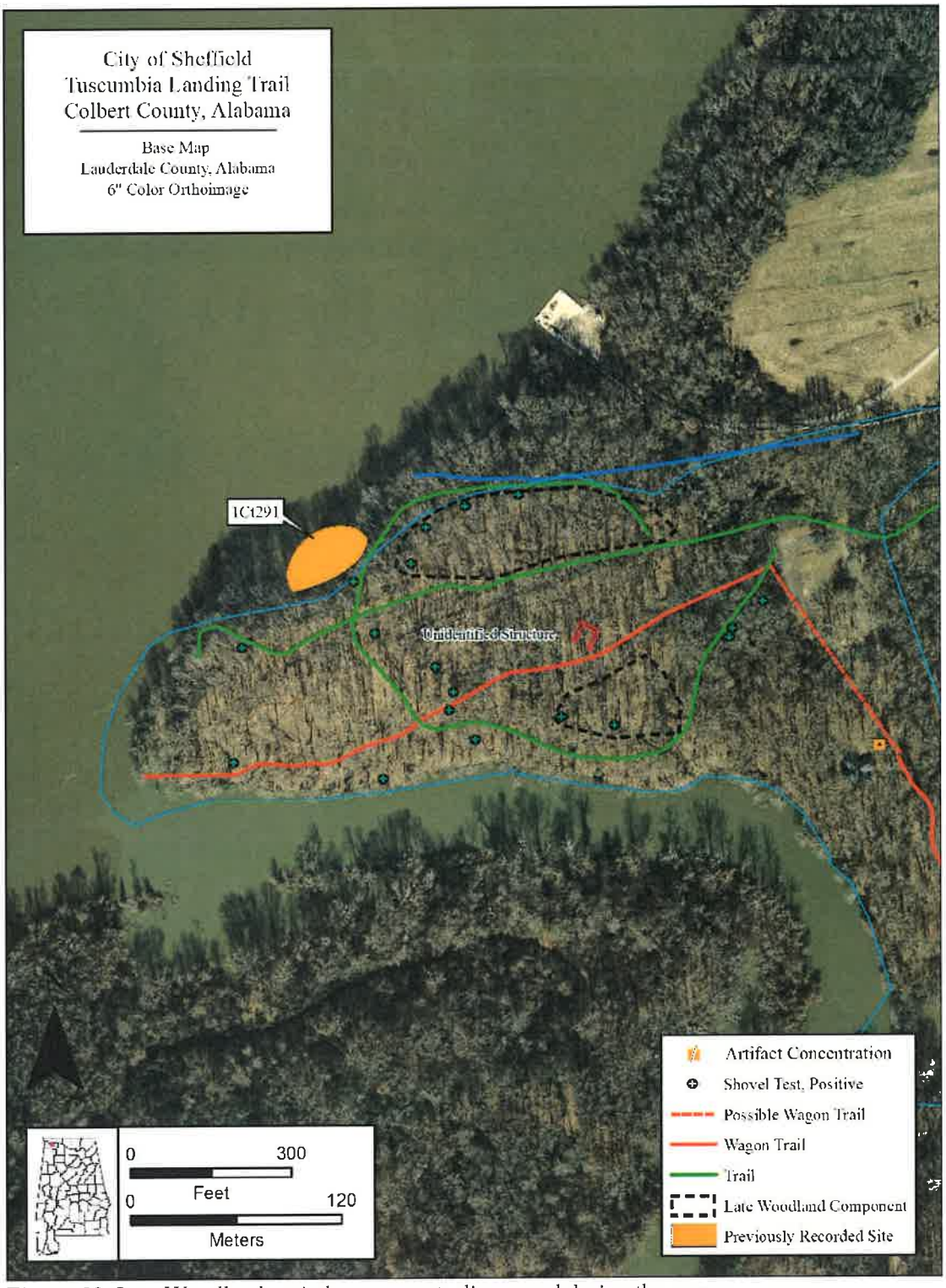

Figure 63. Late Woodland period components discovered during the survey.

Figure 64. Leveled probable location for an additional Tuscumbia Landing structure just north of the TC & D Railroad berm. View northeast.

Figure 65. Artifacts recovered from Shovel Test 62 on a leveled area just north of the wagon trail including debitage and Mississippi Plain pottery.

Figure 66. Shovel Test 4 showing the depth of recovery of Middle Archaic period and historic artifacts.

Figure 67. Diagnostic Artifacts found in Shovel Test 4 including McIntire and Palmer PP/Ks, debitage, and a cut nail.

Tuscumbia Landing was utilized during the Trail of Tears as a departure point and it served as an itinerant campsite as Native Americans waited for steam ships to arrive. Historic accounts indicate that several Native Americans died due to both sickness and accidental death between 1827 and 1838. Although no human remains have been recovered from the site, a prior remote sensing survey identified evidence of at least 17 potential graves located between the nitrate plant building foundations and on a rise north of a road bed in an area measuring approximately 85 m by 35 m (King, Johnson, and Marshall 2012). North of the burial anomalies there is a broad slope going toward the Tennessee River which ends at a 10-15 m wide terrace (Figure 68-69). This terrace has a deposit of artifacts that varies from 40-60 cm deep and included a moderate quantity of debitage, light quantity of FCR, multiple grog tempered Baytown Plain sherds dating to the Late Woodland period, and a cut nail dating prior to the Civil War (Figure 70-71). The cut nail may have come from close to 60 cm deep provided it was not accidently scraped from higher in the shovel test. If it was from that depth it suggests a deep deposit of slope wash. The final historic component is the remains of Nitrate Plant No. 1 that includes foundations of at least two structures, associated concrete pads and footers, a tiled concrete shower base, and the concrete and brick intake building. The most recent disturbances of the site were the modern pavilions and parking lots of the city park, Park West, that opened in 1981 and closed in 1993.

Recovery Technique: Surface Collection-Shovel Testing

Materials Recovered:

Table 5. Components of Site 1Ct292.

Component	Location	Diagnostics	Features	First Documented
Late Paleoindian to Late Archaic	Tennessee River Shoreline	Unknown	Buried A horizon beneath 1830s era clay cap	Meyer 1995
Middle Archaic	Along wagon road downslope from an artificially leveled area.	McIntire PP/K, Palmer PP/K	Shovel Test	Current Project
Late Woodland	South of wagon road near Park West pavilion	Baytown Plain, *var. McKelvey*	Potentially intact deposit	Current Project
Late Woodland	Downslope from and likely including Trail of Tears burial ground	Baytown Plain, *var. McKelvey*	60cm deep possible slope wash	Current Project
Mississippian	On artificially leveled area south of Nitrate Plant No 1 building	Mississippi Plain	Shovel Test	Current Project
Tuscumbia Landing Piers and Depot Structures 1-9	North of confluence of Spring Creek and the Tennessee River	Cut nails, whiteware, black glass	Limestone piers, Limestone and brick foundations, steps and walkways, quarry	Sheridan 1980, King, Johnson, and Marshall 2012
Tuscumbia Landing Structure 10	Between 1Ct291 and the TC&D Railroad berm	Cut nails	Artificially leveled area with possible limestone footer remnants	Current Project
Tuscumbia Landing Structure 11	Same location as Mississippian component	None	Artificially leveled area	Current Project
Possible Wagon Road Remnant	South of primary Park West parking lot	None	3-5 m wide path	Current Project
Possible Wagon Road Crossing	Along drainage in the southern portion of Park West near the boat launch	None	Limestone footer and handmade brick scatter	Current Project
Tuscumbia, Cortland, and Decatur Railroad Berm	East of Tuscumbia Landing Depot	None	Railroad Berm	Sheridan 1980, King, Johnson, and Marshall 2012
Nitrate Plant No. 1	East of Tuscumbia Landing through Park West and south to the nearby boat launch	Wire nails, tar	Ammonium nitrate crystallization buildings, tiled showers, concrete pads and footers, decagonal water intake building, railroad berm	King, Johnson, and Marshall 2012, Current Project

Figure 68. Broad sloped probable burial ground and likely Late Woodland component. View east.

Figure 69. Narrow terrace at the termination of the broad slope where erosional wash containing artifacts has accumulated. View northeast.

Figure 70. Shovel Test 46 was placed on the narrow terrace and yielded artifacts to 60 cmbs.

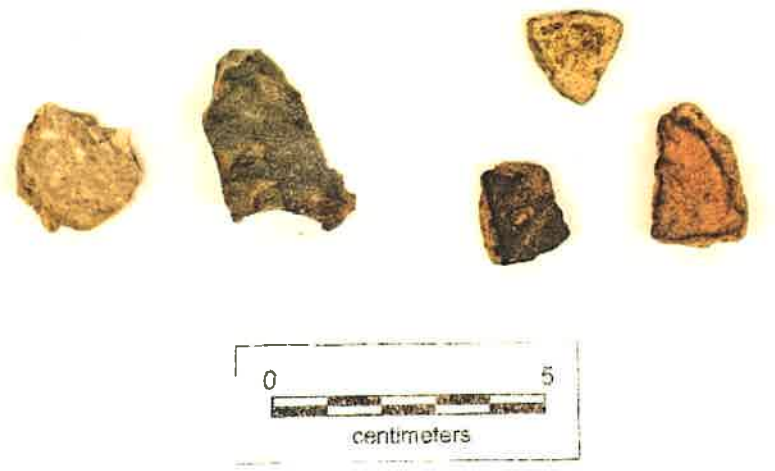

Figure 71. Shovel Test 46 sample of artifacts including diagnostic Baytown Plain, *var. McKelvey*, Bangor chert debitage, and Ft. Payne chert debitage.

Temporal/Cultural Affiliation: Late Paleoindian – Late Archaic, Late Woodland, 19th-20th Centuries

Evaluation/Recommendation: Site 1Ct292, the Tuscumbia Landing site, is already listed on the NRHP under criteria A as it is associated with the Trail of Tears that is considered a significant event in American history and D since it has yielded important information about local, regional, and national history and prehistory, making it a very culturally significant site. The intact structural remains of the Tuscumbia Landing buildings, the associated artifact deposits, the remnants of the TC&D Railroad terminus, and a likely historic Native American cemetery make this location one to be handled with care. Based on the current survey, the boundary of the archaeological site is being extended to the shoreline along Spring Creek to encompass positive shovel tests and the possible location where the Tennessee militia under the command of Col. James Robertson fired on the inhabitants of Coldwater Town on the opposite bank. The boundary is being slightly modified on the northern slope to include the walking trail that led downslope from Structure 9 to a switchback trail that led down to the limestone piers of the landing. The boundary is also being extended toward the north to include a level area where an additional structure may have once stood and the historic artifact scatter just downslope. During the survey, there was an attempt to find additional portions of the wagon road that leads to Tuscumbia Landing. A potential segment of the wagon road was observed running down a portion of the ridge that runs north-south just to the south of the main Park West parking lot. Additionally, a possible drainage crossing for the wagon road was found just to the northeast from a sewer access road on the southern boundary of Park West and the nearby boat launch to the south. The crossing consisted of at least one concrete footer, a brick scatter on the southwest side of the drainage, and the possible remnants of a trail on the northeast side. It was decided to include these in the boundary of the site as it is very likely that these are directly associated the either Tuscumbia Landing or possibly Nitrate Plant No. 1.

The crest of the ridge was heavily impacted by the construction of buildings associated with Nitrate Plant No. 1 prior to the plant coming online in 1918. One of the three concrete foundations and the associated historic artifact scatter is located within the boundaries of the NRHP boundary. The nitrate

plant remnants are themselves locally and nationally significant to the World War I war effort, despite the fact that it was only used for a short time, completed after the end of WWI, and was closed shortly after the war. Many of the buildings from Nitrate Plant No. 1 were dismantled by 1941, while several buildings from the plant's core to the northwest were modified and reused by private owners. The remnants within the APE were abandoned and left to be grown over by forest for approximately 80 years. These remains of the nitrate plant give a glimpse into the industry of the early 20th century during WWI. This is a separate period of significance from the Trail of Tears (1831-1850), which is the focus of the NRHP listing. The archaeological site boundary is being extended to include the nitrate plant remains. These remains include the concrete foundations of two ammonium nitrate buildings, sporadic concrete pads and footers, the tiled concrete base of a set of showers, and the artifact scatters associated with these structures. In addition, the boundary is being extended toward the south along Spring Creek to include a sewer system and water intake building directly associated with the concrete foundations on the ridge. The intake building is a circular brick structure that was acquired by TVA as part of the Nitrate Plant No. 1 reservation. Local history and maps of the area appear to show that the building was repurposed in the 1930s to be one of four malaria control bases run by TVA and possibly a training center for mosquito control operations. The site boundary of 1Ct292 is also being extended to the east to include the railroad berm that connected these buildings with the rest of Nitrate Plant No. 1 to the northeast (Figure 72). This railroad berm may have added significance if it was built over top of the original TC&D Railroad.

Site 1Ct291

Topographic Map: 1971 Tuscumbia, AL
Township: 03S *Range*: 11W
Elevation: 414 ft AMSL
Surface Area: 81 sq. m.
Natural Setting: Upland Slope
NRHP Status: Ineligible
Soil Type: Fullerton-Bodine Assoc.
Artifact Density: Light

Easting: 433620 *Northing:* 3845337
Section: 31-NW ¼ SE ¼ SE ¼
Site Size: 9 m by 9 m
Maximum Depth: 30 cmbs
Degree of Disturbance: 90%
Vegetative Cover: Secondary Growth, Open
Soil Texture: Silt Loam
Components: Woodland

Comments: Site 1Ct291 was recorded by Scott Shaw, University of Alabama, Tuscaloosa, Alabama. The site consists of the remains of a small but dense bluff shelter deposit. Prior to inundation, the site was approximately 20 meters from the river. Now the water level is usually constantly eroding it. A shell midden approximately 30 cm deep is visible in the extreme upper end of the site and contains flakes and sherds. The sherd recovered were plain and limestone tempered. This site was not revisited during this survey as the trails do not go down toward the shoreline in this area, though the likely landform was observed.

Recovery Technique: Not Tested

Temporal/Cultural Affiliation: Woodland stage

Evaluation/Recommendation: Site 1Ct291 was referred to as an actively eroding shell midden that was once a bluff shelter prior to inundation when the University of Alabama visited it in 1990 (Meyer 1995). The recommendation was that no further investigation was necessary. To prevent further damage by visitors and due to the steep nature of the landform, this site should be avoided by walking trails.

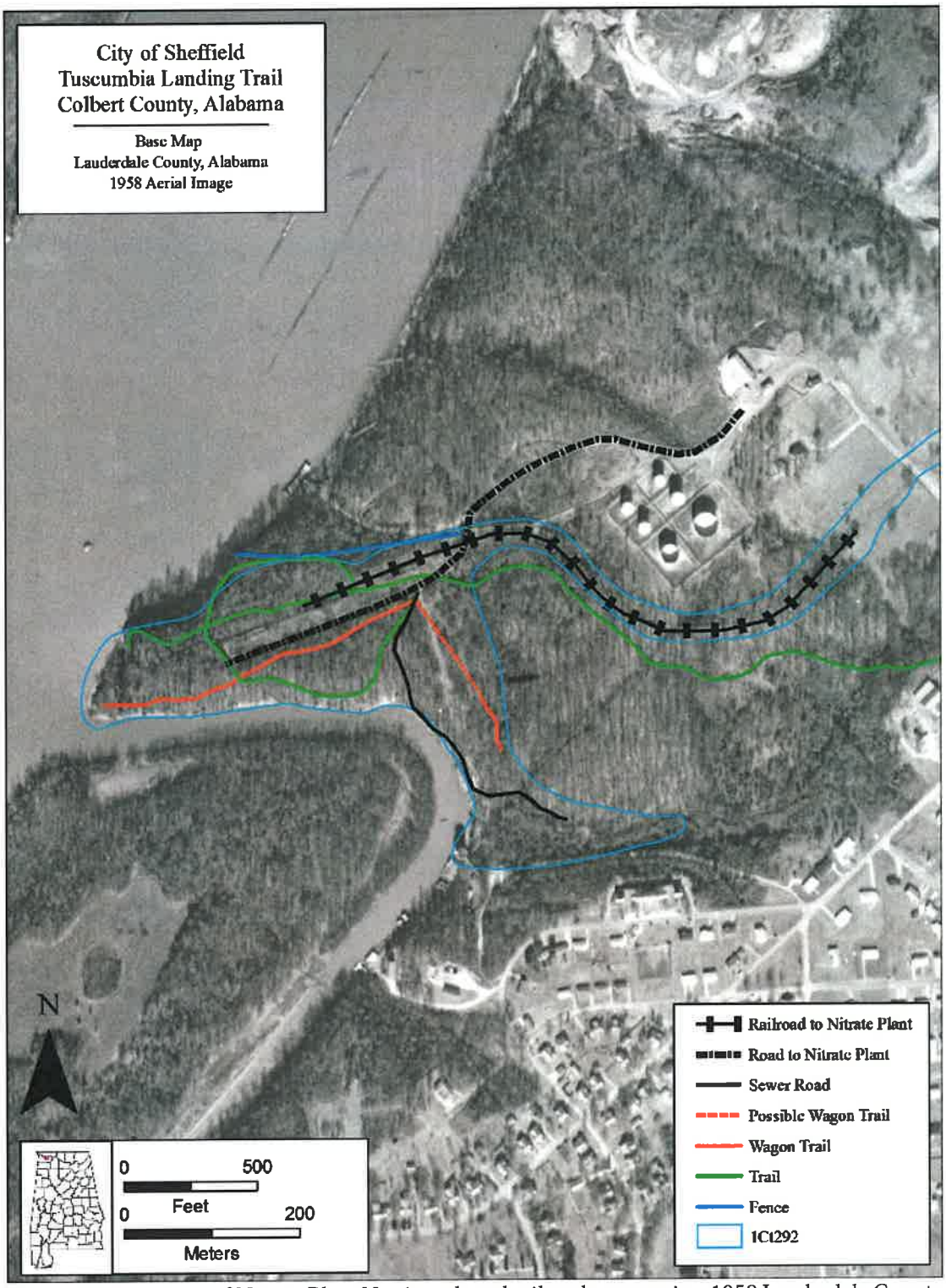

Figure 72. Locations of Nitrate Plant No. 1 roads and railroads as seen in a 1958 Lauderdale County aerial photograph (UA Cartographic Research Library 2017).\

Summary and Evaluation

Tuscumbia Landing consists of a multi-component site ranging from the Late Paleoindian period to the early 20th century. There are several locations that are likely to produce valuable information about Site 1Ct292 when they are further investigated and thus should be avoided (Figure 73). The Paleoindian and Archaic components that were primarily found eroding out of a buried A-horizon below the clay cap put in place during the construction of the landing are well preserved and should continue to be protected. The clay cap should continue to protect this buried site from foot traffic. Signage is already present to deter looting at this location. On the ridge east of Tuscumbia Landing and south of the western most ammonium nitrate building, shovel testing indicated that there might be a partially intact Late Woodland period site near a wagon road remnant and a modern park pavilion. This assumption is based on the recovery of artifacts up to 40 cm deep and the presence of Baytown Plain, *var. McKelvey* pottery. The majority of shovel tests in this level area were positive for cultural material. The proposed walking trail was placed downslope to avoid this component.

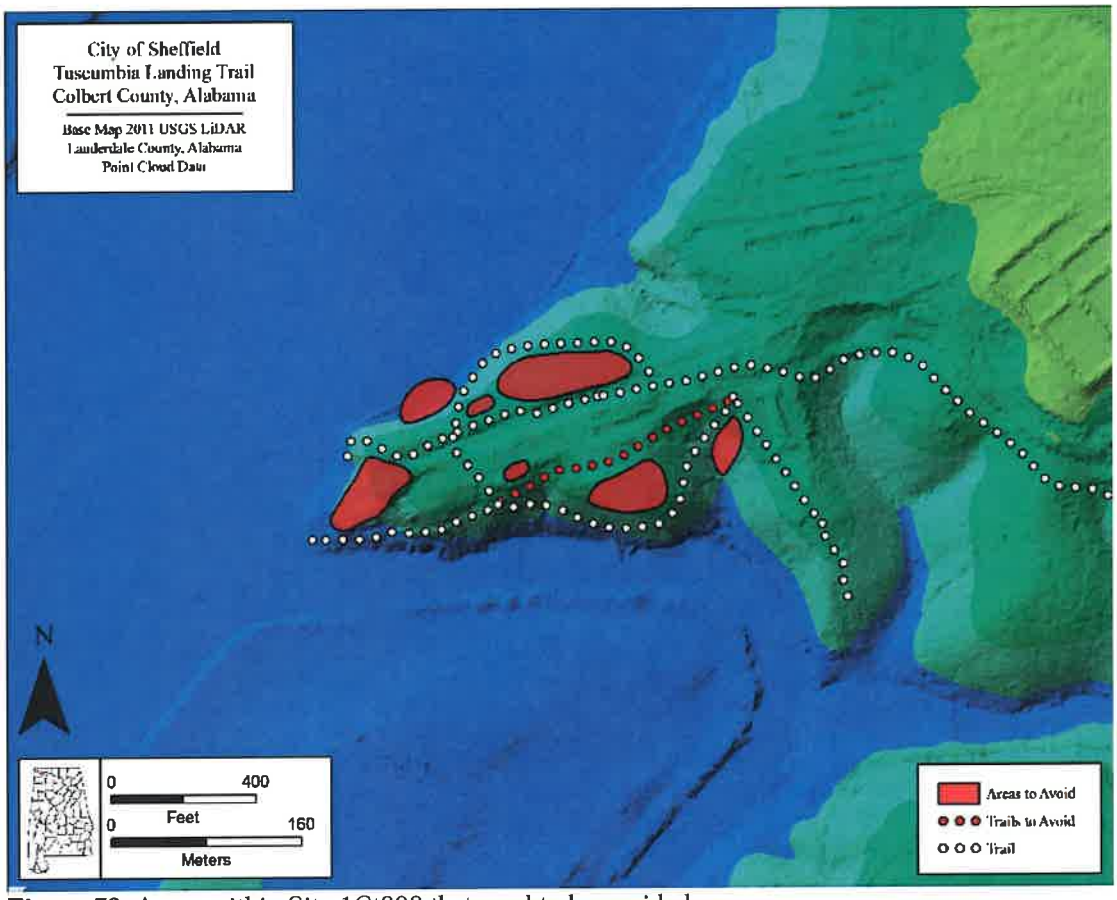

Figure 73. Areas within Site 1Ct292 that need to be avoided.

Between the two nitrate plant buildings and north of a nitrate plant era road is where a series of grave like-anomalies were found during remote sensing that were described as probable shallow burials of Native Americans who died during Indian Removal (King, Johnson, and Marshall 2012). This probable burial ground gradually slopes to the north and continues beyond the anomalies and ends at a narrow terrace before the slope becomes much more steep. Shovel testing of this terrace and a small portion of the broad slope indicated the presence of a Late Woodland period component at the same location as the potential burial ground. To avoid the possible burial ground the proposed walking trail is in a corridor of negative shovel tests that were conducted along a natural wildlife trail and a modern fence line between the narrow terrace and the Tennessee River shoreline. Due to the shallow nature of the anomalies and their importance, it is imperative that foot traffic along this surface be prevented. A 383 m section of the wagon road leading from near the top of ridge down to the quarry and pier area next to the river was utilized as a trail when Park West was open to the public. An approximately 10 m trail connects the wagon road with the level ridge. This portion of the wagon road was cleared of leaf litter and revealed only two fragments of handmade brick with no artifact scatter eroding from foot traffic. Further use as a trail of this surface composed of limestone bedrock and compact red clay should not cause any additional damage to the road. However, the segment of the wagon trail that is east of its intersection with the short trail to the top of the ridge should be avoided for use as a trail. The proposed trail to bypass the wagon road travels along the middle of the slope where shovel testing was negative and only rejoins the wagon road where it was disturbed by an access road to the nitrate plant era sewers. There is a small area between the sewer access road and the primary Park West parking lot where shovel tests revealed historic and prehistoric artifacts and a locus of FCR at the surface that should be avoided.

In terms of aboveground features and structural foundations, there are several features for which we recommend avoidance. There are artificially leveled terraces for buildings associated with Tuscumbia Landing and two additional leveled areas further to the east that were presumably created during the construction of the landing. These leveled surfaces should be avoided by trails since the limited shovel testing has shown them likely to contain significant cultural deposits. In addition to the structures, there are remains of a wagon road leading up to the ridge and the terminus of the TC&D Railroad. The only firm remains of the TC&D railroad are the berms and ditches west and north of the westernmost Nitrate Plant concrete foundation. The ground here is stable and deeply disturbed. However, the soils composing the berms seem to have come from the ridge and in places contain prehistoric debitage. The more recent historic component related to the Nitrate Plant No. 1 includes at least two structural foundations, associated concrete pads and footers, a tiled concrete shower base, and the concrete and brick intake building. The most recent activity near Tuscumbia Landing was the construction of the pavilions and parking lots of the City of Sheffield's Park West, which began in 1981 and closed in 1993 due to criminal activity. Subsurface disturbance from this event seems to have been contained to the immediate vicinity of the structures within the APE.

Recommendations

Site 1Ct292 is currently listed on the NRHP under criteria A for its association with events that have made a significant contribution to the broad patterns of history and D as it has yielded important information about history and prehistory. The intact structural remains of the Tuscumbia Landing buildings, the associated archaeological deposits, remnants of the TC&D Railroad terminus, as well as a potential Trail of Tears burial ground make this a culturally rich location. The boundary of the archaeological site is being extended in response to the additional evidence gathered during this survey. It is being extended down to the shoreline along Spring Creek to encompass positive shovel tests along the wagon road and downslope from it. The boundary is being slightly modified on the northern slope to include a footpath that led downslope from Structure 9 to a

switchback trail that, in turn, led down to the limestone piers of the landing. The northern boundary is also being slightly extended to include prehistoric evidence found downslope from the Trail of Tears burial ground. The site boundary is being extended to the east to include possible wagon road segments and the Nitrate Plant No. 1 remnants. One potential wagon road segment was found running down a portion of a north-south oriented ridge just to the east of Tuscumbia Landing and south of the main Park West parking lot. Also, a possible wagon road crossing was found along a drainage that begins near the park entrance and empties into Spring Creek just south of the adjacent boat launch. The potential crossing consisted of at least one concrete footer and a brick scatter on the southwest side of the drainage as well as the possible remnants of a road and ditch on the northeast side. It was decided to include these in the boundary of the site as it is likely that these are associated with the historic operations of Tuscumbia Landing.

The eastern boundary will also include multiple concrete structure foundations, the plant sewer system, and the railroad berm heading toward the core of the nitrate plant. The remains of the nitrate plant include the concrete foundations of two ammonium nitrate buildings, the decagonal water intake building that was later used as a malaria control camp, sporadic concrete pads and footers, the tiled concrete base of a set of showers, and artifact scatters associated with these structures. The nitrate plant remnants are themselves locally and nationally significant due to the unique contribution to the World War I war effort, the experimental ammonium nitrate crystallization buildings found on the ridge were built using stolen German plans. Since the experiment was ultimately unsuccessful, their use was limited. After the plant was acquired by TVA the buildings remained idle and by 1941 most of the buildings from Nitrate Plant No. 1 were torn down. The remnants near Tuscumbia Landing were abandoned to the forest for approximately 80 years. Further study would give a glimpse into experimental industry in the early 20th century. The nitrate plant ascribes a new period of significance for the site that is distinct from the 19th century Trail of Tears component, which is the focus of the NRHP listing.

The crest of the ridge was certainly impacted by the construction of buildings associated with Nitrate Plant No. 1. However, the shovel tests seem to indicate that the disturbance was contained, as it did not affect the potential burial ground, nearby Tuscumbia Landing, or the wagon road remnant on top of the ridge. Also along the ridge, it is possible that this nitrate plant era railroad berm may have been built over the original footprint and path of the 1830s-era TC&D Railroad. If that is the case, the initial berm may be buried. Based on these findings, it is the opinion of this office that the proposed trail system as well as the increased foot traffic within the site will have an adverse effect the NRHP listed Tuscumbia Landing. However, the impact will be limited provided the existing trails continue to be used, that additional trails avoid structural foundations and archaeological deposits, and that any new routes are on designated routes prescribed by OAR.

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APPENDIX A

THE UNIVERSITY OF ALABAMA | University Museums
Office of Archaeological Research

January 11, 2019

Matthew D. Gage, Director
Office of Archaeological Research
University of Alabama Museums
13075 Mound State Parkway
Moundville, AL 35474

Dear Matt:

As per your request, this letter is to establish an agreement with you to provide you with curation services on an as-needed basis. We are recognized by a variety of Federal agencies as a repository meeting the standards in 36 CFR Part 79 and have formal agreements to provide curation under these guidelines to agencies such as the Department of Defense, National Park Service, U.S. Fish and Wildlife Service, U.S. Soil Conservation Service, U.S. Army Corps of Engineers, Tennessee Valley Authority, National Forest Service, etc.

Please be advised that once a year we must be notified of all reports in which we were named as the repository. Project collections must be submitted within one calendar year of completion. Small projects may be compiled for periodic submission. For Alabama, the AHC survey policy specifies which materials must be curated (Administrative Code of Alabama, Chapter 460-X-9). Archaeological documentation must be curated even if no artifacts are recovered. Renewal of this agreement is contingent upon compliance.

We appreciate having the opportunity to assist you with curation services and look forward to working with you whenever we can be of service.

Sincerely,

Eugene Futato

Eugene M. Futato RPA
Deputy Director

13075 Moundville Archaeological Park | Moundville, AL 35474 | 205-371-2266 | Fax 205-371-2494

APPENDIX B

Main Horizontal Provenience	Group	Grade	Category	Subcategory	Raw Material	Portion	Remarks	Count	Weight (g)
ST3	Metal	-	Cut Nail	-	Iron	Complete	-	1.00	15.30
	Metal	-	Screw	-	Iron	Complete	-	1.00	73.30
	Other	-	Tar	-	-	Fragment	-	2.00	3.40
ST4	Debitage	.5"	Cortical Flake	-	Tuscaloosa Gravel	-	-	1.00	1.40
	Debitage	.5"	Cortical Flake	-	Upper Fort Payne Chert	-	-	2.00	2.90
	Debitage	.25"	Cortical Flake	-	Upper Fort Payne Chert	-	-	3.00	1.10
	Metal	-	Cut Nail	-	Iron	Complete	-	1.00	48.10
	Other	-	Fire Cracked Rock	-	Black Bangor Chert	-	-	2.00	7.20
	Chipped Stone	-	McIntire	-	Blue Gray Fort Payne Chert	Proximal	-	1.00	13.40
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	5.00	0.90
	Debitage	.5"	Noncortical Flake	-	Blue Gray Bangor Chert	-	Fire cracked as well	1.00	2.30
	Chipped Stone	-	Palmer	-	Blue Gray Bangor Chert	Proximal	-	1.00	2.30
	Debitage	-	Shatter	-	Blue Gray Bangor Chert	-	-	1.00	15.10
ST6	Glass	-	Container	Black	-	Fragment	-	2.00	3.90
	Debitage	.5"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	1.80
	Other	-	Slag	-	-	Fragment	-	2.00	0.80
	Ceramic	-	Unidentified	Albany Slip	Stoneware	Base	Disque on opposite side	1.00	10.00
	Ceramic	-	Unidentified	Undecorated	Porcelain	Rim	-	1.00	1.40
	Metal	-	Wire Nail	-	Iron	Fragment	-	1.00	17.50
ST8	Debitage	.5"	Cortical Flake	-	Upper Fort Payne Chert	-	-	1.00	0.90
	Other	-	Fire Cracked Rock	-	Blue Gray Fort Payne Chert	-	-	2.00	1.60
	Other	-	Fire Cracked Rock	-	Sandstone	-	-	1.00	32.90
	Debitage	-	Shatter	-	Blue Gray Bangor Chert	-	-	1.00	4.60
	Ceramic	-	Sherdlet	-	-	-	-	1.00	0.50
	Glass	-	Unidentified	Aqua	-	Fragment	-	1.00	0.80
ST11	Debitage	.25"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	0.10
	Debitage	.5"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	1.20
	Debitage	.5"	Cortical Flake	-	Tuscaloosa Gravel	-	-	1.00	3.60
	Debitage	.5"	Noncortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	0.70
ST13	Debitage	.25"	Noncortical Flake	-	Upper Fort Payne Chert	-	-	2.00	0.10
ST17	Ceramic	-	Baytown Plain, var. McKelvey	-	-	Rim	-	1.00	2.00
	Glass	-	Bottle	Olive	-	Neck	pre-1880s	1.00	5.80
	Debitage	.5"	Cortical Flake	-	Upper Fort Payne Chert	-	-	2.00	2.20
	Debitage	.25"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	5.00	0.90

Main Horizontal Provenience	Group	Grade	Category	Subcategory	Raw Material	Portion	Remarks	Count	Weight (g)
	Debitage	.5"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	1.00	1.20
	Debitage	.25"	Cortical Flake	-	Upper Fort Payne Chert	-	-	2.00	0.40
	Other	-	Fire Cracked Rock	-	Blue Gray Fort Payne Chert	-	-	5.00	2.60
	Other	-	Fire Cracked Rock	-	Blue Gray Bangor Chert	-	-	1.00	0.40
	Debitage	.5"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	1.00	1.20
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	3.00	0.80
	Debitage	.5"	Noncortical Flake	-	Blue Gray Fort Payne Chert	-	-	4.00	2.60
	Ceramic	-	Plate	Undecorated	Whiteware	Fragment	-	1.00	3.10
	Glass	-	Unidentified	Olive	-	Fragment	pre-1880s	1.00	2.70
ST18	Debitage	.25"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	4.00	1.90
	Debitage	.25"	Noncortical Flake	-	Tuscaloosa Gravel	-	-	1.00	0.10
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	3.00	0.50
	Other	-	Nutshell	-	-	Fragment	-	1.00	0.60
	Debitage	-	Shatter	-	Blue Gray Bangor Chert	-	-	1.00	0.50
	Glass	-	Unidentified	Colorless	-	Fragment	-	1.00	0.10
ST20	Debitage	.5"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	1.00	0.60
ST24	Other	-	Brick	-	-	-	-	2.00	63.90
	Chipped Stone	-	Core	-	Blue Gray Fort Payne Chert	-	-	1.00	43.40
	Debitage	.25"	Cortical Flake	-	Chert	-	-	1.00	0.10
	Debitage	.5"	Noncortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	2.10
	Debitage	.25"	Noncortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	0.10
	Debitage	-	Shatter	-	Blue Gray Fort Payne Chert	-	-	1.00	1.60
	Glass	-	Window Pane	Aqua	-	Fragment	-	1.00	0.10
ST25	Other	-	Brick	-	-	-	-	1.00	7.40
	Debitage	.5"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	11.00	13.30
	Debitage	.25"	Cortical Flake	-	Upper Fort Payne Chert	-	-	4.00	2.00
	Debitage	.25"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	16.00	5.20
	Debitage	.5"	Cortical Flake	-	Upper Fort Payne Chert	-	-	2.00	2.10
	Other	-	Fire Cracked Rock	-	Blue Gray Bangor Chert	-	-	4.00	3.00
	Debitage	.5"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	6.00	7.70
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	13.00	3.00
	Debitage	-	Shatter	-	Blue Gray Bangor Chert	-	-	5.00	8.60
ST26	Metal	-	Cartridge	-	Brass	-	.22 caliber, remington and western cartridge company, 1930s	2.00	0.90

Main Horizontal Provenience	Group	Grade	Category	Subcategory	Raw Material	Portion	Remarks	Count	Weight (g)
	Debitage	-	Shatter	-	Blue Gray Bangor Chert	-	-	1.00	2.70
ST27	Debitage	.5"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	3.00	5.30
	Debitage	.25"	Noncortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	0.40
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	4.00	2.00
ST29	Debitage	.5"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	1.00	1.60
	Other	-	Fire Cracked Rock	-	Blue Gray Bangor Chert	-	-	1.00	0.10
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	3.00	1.10
ST38	Other	-	Brick	-	-	Fragment	2 thermally altered	10.00	117.20
	Other	-	Charcoal	-	-	Fragment	-	6.00	0.80
	Metal	-	Cut Nail	-	Iron	Fragment	-	11.00	18.30
	Other	-	Mortar	-	-	Fragment	-	2.00	1.70
	Metal	-	Unidentified	-	Iron	Fragment	-	2.00	0.40
	Glass	-	Window Pane	Aqua	-	Fragment	1 thermally altered	2.00	1.40
ST44	Debitage	.5"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	2.00	4.50
	Debitage	.25"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	0.70
	Debitage	.5"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	One thermally altered	2.00	7.00
	Metal	-	Cut Nail	-	Iron	Proximal	-	1.00	2.60
	Other	-	Fire Cracked Rock	-	Blue Gray Fort Payne Chert	-	-	1.00	0.80
	Debitage	.25"	Noncortical Flake	-	Blue Gray Fort Payne Chert	-	-	2.00	0.60
	Debitage	.25"	Noncortical Flake	-	Tuscaloosa Gravel	-	-	1.00	0.10
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	1.00	0.80
	Other	-	Tar	-	-	Fragment	-	1.00	0.10
	Metal	-	Wire Nail	-	Iron	Proximal	-	1.00	3.20
	Metal	-	Wire Nail	-	Iron	-	-	3.00	9.00
ST46	Ceramic	-	Baytown Plain, var. McKelvey	-	-	Body	-	2.00	5.10
	Debitage	.25"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	5.00	1.40
	Debitage	.125"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	1.00	0.10
	Debitage	.25"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	6.00	1.90
	Debitage	1"	Cortical Flake	-	Upper Fort Payne Chert	-	-	1.00	11.50
	Debitage	.5"	Cortical Flake	-	Upper Fort Payne Chert	-	-	4.00	5.90
	Debitage	.5"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	5.00	7.20
	Metal	-	Cut Nail	-	Iron	Fragment	refit	2.00	7.10
	Other	-	Fire Cracked Rock	-	Blue Gray Fort Payne Chert	-	-	4.00	16.00
	Other	-	Fire Cracked Rock	-	Blue Gray Bangor Chert	-	-	7.00	6.90

Main Horizontal Provenience	Group	Grade	Category	Subcategory	Raw Material	Portion	Remarks	Count	Weight (g)
	Other	-	Fire Cracked Rock	-	Upper Fort Payne Chert	-	-	2.00	15.10
	Other	-	Fire Cracked Rock	-	Quartzite	-	-	1.00	20.40
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	4.00	1.80
	Debitage	.5"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	5.00	10.30
	Debitage	.25"	Noncortical Flake	-	Upper Fort Payne Chert	-	-	2.00	0.10
	Debitage	-	Shatter	-	Blue Gray Bangor Chert	-	-	8.00	13.40
	Ceramic	-	Sherdlet	-	-	-	-	3.00	2.70
	Glass	-	Window Pane	Aqua	-	Fragment	-	1.00	0.10
ST48	Ceramic	-	Baytown Plain, var. McKelvey	-	-	Body	-	3.00	7.80
	Chipped Stone	-	Core	-	Blue Gray Bangor Chert	Complete	-	1.00	36.50
	Debitage	.5"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	2.00	4.90
	Debitage	.25"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	4.00	1.60
	Debitage	.5"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	4.00	17.40
	Debitage	.25"	Cortical Flake	-	Upper Fort Payne Chert	-	-	2.00	0.60
	Debitage	.5"	Cortical Flake	-	Upper Fort Payne Chert	-	-	3.00	4.10
	Debitage	1"	Cortical Flake	-	Upper Fort Payne Chert	-	-	1.00	4.90
	Other	-	Fire Cracked Rock	-	Quartzite	Fragment	-	2.00	148.70
	Other	-	Fire Cracked Rock	-	Blue Gray Bangor Chert	Fragment	-	10.00	11.70
	Debitage	.25"	Noncortical Flake	-	Blue Gray Fort Payne Chert	-	-	4.00	1.20
	Debitage	.5"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	4.00	6.00
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	14.00	4.70
	Debitage	-	Shatter	-	Upper Fort Payne Chert	-	-	1.00	0.40
	Debitage	-	Shatter	-	Blue Gray Bangor Chert	-	-	11.00	46.00
	Ceramic	-	Sherdlet	-	-	-	-	1.00	0.10
ST50	Debitage	1"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	4.70
	Debitage	.25"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	2.00	1.00
	Debitage	.25"	Cortical Flake	-	Upper Fort Payne Chert	-	-	2.00	0.70
	Debitage	.5"	Noncortical Flake	-	Upper Fort Payne Chert	-	-	1.00	0.90
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	2.00	0.90
	Other	-	Nutshell	-	-	-	-	1.00	0.10
	Debitage	-	Shatter	-	Blue Gray Bangor Chert	-	-	1.00	0.90
ST60	Debitage	.5"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	0.60
	Metal	-	Cut Nail	-	Iron	Fragment	-	1.00	3.20
	Debitage	.25"	Noncortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	0.10

Main Horizontal Provenience	Group	Grade	Category	Subcategory	Raw Material	Portion	Remarks	Count	Weight (g)
	Glass	-	Unidentified	Colorless	-	Fragment	-	1.00	0.80
	Glass	-	Unidentified	Olive	-	Fragment	-	2.00	1.60
ST62	Chipped Stone	-	Core	-	Blue Gray Bangor Chert	-	-	1.00	14.40
	Debitage	.5"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	4.00	11.10
	Debitage	.5"	Cortical Flake	-	Upper Fort Payne Chert	-	-	2.00	2.80
	Debitage	.5"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	5.00	15.30
	Debitage	1"	Cortical Flake	-	Blue Gray Fort Payne Chert	-	-	1.00	8.90
	Debitage	.25"	Cortical Flake	-	Blue Gray Bangor Chert	-	-	4.00	1.10
	Ceramic	-	Mississippi Plain	-	-	Body	-	1.00	1.30
	Debitage	.25"	Noncortical Flake	-	Blue Gray Bangor Chert	-	-	13.00	4.00
	Debitage	-	Shatter	-	Blue Gray Bangor Chert	-	-	1.00	2.20
	Glass	-	Unidentified	Colorless	-	Fragment	Probably modern	2.00	0.60

55,871

SPECIAL WARRANTY DEED

THIS INDENTURE, made and entered into by and between UNITED STATES OF AMERICA, acting herein by and through Tennessee Valley Authority (hereinafter sometimes referred to as "Authority"), a corporation created and existing under an Act of Congress, known as the "Tennessee Valley Authority Act of 1933," as amended, and TENNESSEE VALLEY AUTHORITY, each hereinafter referred to as "Grantor," and CITY OF SHEFFIELD, ALABAMA, hereinafter referred to as "Grantee,"

WITNESSETH:

WHEREAS, Section 4(k)(d) of the above mentioned Act of Congress authorized the Authority, in the name of the United States of America, to convey Nitrate Plant Numbered 1, of which the following described land is a part, with the approval of the President and the War Department; and

WHEREAS, no permanent dam, hydroelectric power plant, fertilizer plant, or munitions plant is located on the land hereinafter described; and

WHEREAS, the sale of the land hereinafter described has been duly approved by the President of the United States and the War Department;

NOW, THEREFORE, in consideration of and pursuant to the terms of contract TV-6257A, entered into between Authority and Grantee, Grantor does hereby, subject to the stipulations hereinafter set forth, grant, bargain, sell, transfer and convey unto Grantee, for municipal purposes only:

TRACT NO. XNPT-30

A tract of land lying in Colbert County, State of Alabama, in Sec. 5, T4S, R11W, on the shores of the Spring Creek Embayment of Pickwick Landing Lake immediately east of Wilson Dam Village No. 1, the said tract being comprised of four parcels and being more particularly described as follows:

Parcel No. 1

Beginning at a point (Coordinates: N. 1,723,005; E. 435,486) in the 423-foot contour on the shores of the Spring Creek Embayment of Pickwick Landing Lake and in the boundary of the Nitrate Plant No. 1 Reservation on the west side of a road; thence with the boundary of the Nitrate Plant No. 1 Reservation S. 5° 51' E., 451 feet to a point in the 423-foot contour on the shore of the Spring Creek Embayment of the lake; thence leaving the boundary of the Nitrate Plant No. 1 Reservation and with the 423-foot contour as it meanders first in a general northwesterly direction and thence in a northeasterly direction to the point of beginning, and containing 1.7 acres, more or less.

Parcel No. 2

Beginning at an angle iron (Coordinates: N. 1,724,760; E. 435,590) in the west right of way line of a road and in the boundary of the Nitrate Plant No. 1 Reservation; thence with the boundary of the Nitrate Plant No. 1 Reservation

Kate McClain, an unmarried woman, dated April 5, 1918, recorded in Deed Book 27, page 104; deed from W. A. Stansell et al, dated August 26, 1918, recorded in Deed Book 28, page 148; deed from W. A. Reid et al, dated April 8, 1918, recorded in Deed Book 24, page 561; deed from North Alabama Stone Company, a corporation, dated April 27, 1918, recorded in Deed Book 27, page 373; deed from W. A. Reid, et al, dated April 13, 1918, recorded in Deed Book 24, page 563; deed from Sephus Ramsay et ux, dated April 9, 1918, recorded in Deed Book 27, page 232; deed from Tom Gipson, et ux, dated July 1, 1918, recorded in Deed Book 27, page 231; deed from John F. Funke et al, dated April 20, 1918, recorded in Deed Book 27, page 154; deed from John W. Johnson, Commissioner, dated June 11, 1921, recorded in Deed Book 35, page 1; deed from J. W. Long et ux, dated August 18, 1918, recorded in Deed Book 34, page 538; deed from J. W. Long, et ux, dated April 17, 1918, recorded in Deed Book 27, page 65; deed from James Wisdom et ux, dated April 16, 1918, recorded in Deed Book 27, page 175; deed from William Steele et al, dated April 16, 1918, recorded in Deed Book 24, page 520; deed from William Steele, et ux, dated April 15, 1918, recorded in Deed Book 27, page 177; deed from William Steele et al, dated April 6, 1918, recorded in Deed Book 27, page 75; deed from J. E. Deloney, Jr., an unmarried man, dated June 26, 1918, recorded in Deed Book 27, page 483; deed from William Steele et al, dated April 16, 1918, recorded in Deed Book 27, page 70; deed from William Steele et al, dated April 17, 1918, recorded in Deed Book 27, page 72; deed from Ephraim Pruett, a single man, et al, dated April 19, 1918, recorded in Deed Book 27, page 481; deed from W. G. Halsey, et ux, dated August 13, 1918, recorded in Deed Book 27, page 485 and deed from F. D. Jenkins et ux, dated April 13, 1918, recorded in Deed Book 27, page 95, all instruments recorded in the office of the Probate Judge, Colbert County, Alabama.

It is understood and agreed that the above described land is conveyed subject to such rights as may be vested in the public to an abandoned county road.

TRACT NO. XNPT-32

A tract of land lying in Colbert County, State of Alabama, in Sec. 5, T4S, R11W, on the east side of the Spring Creek Embayment of Pickwick Landing Lake at Wilson Dam Village No. 1, and more particularly described as follows:

Beginning at an angle iron at the intersection of the south line of Norris Circle and the west line of Pickwick Street; thence with the west line of Pickwick Street S. 5° 00' E., 700.0 feet to an angle iron in the north line of Norris Circle; thence with the north line of Norris Circle S. 85° 01' W., 302.0 feet, passing a concrete monument at 2.0 feet, to a concrete monument; thence with a curve having a radius of 350.0 feet as it curves to the right in a general northerly direction 1099.6 feet to a concrete monument; thence with the south line of Norris Circle N. 85° 01' E., 302.0 feet, passing a concrete monument at 300.0 feet, to the point of beginning, and containing 9.3 acres, more or less.

The positions of corners and directions of lines are referred to the Alabama (West) Coordinate System.

The above described tract of land was acquired by the United States of America by virtue of deed from North Alabama Stone Company, a corporation, dated April 27, 1918, recorded in DeedBook 27, page 373 and deed from Fannie R. Blair, a widow, et al, dated October 7, 1918, recorded in Deed Book 31, page 565, both instruments recorded in the office of the Probate Judge, Colbert County, Alabama.

TRACT NO. XNPT-33

A tract of land lying in Colbert County, State of Alabama, in Secs. 5 and 6, T4S, R11W, on the east side of the Spring Creek Embayment of Pickwick Landing Lake at Wilson Dam Village No. 1, the said tract comprising two parcels and being more particularly described as follows:

Parcel No. 1

Beginning at an angle iron in the south line of Wilson Dam Avenue and at the northwest corner of Lot 1 of the Wilson Dam No. 1 Subdivision; thence with the line of the said lot S. 6° 45' E., 141.2 feet to an angle iron; thence S. 70° 14' E., 152.4 feet to an angle iron in the west line of Guntersville Circle; thence with the west line of Guntersville Circle and with a curve having a radius of 120.0

The above described tract of land was acquired by the United States of America by virtue of the deed from Fannie R. Blair, a widow, et al, dated October 7, 1918, recorded in Deed Book 31, page 565, in the office of the Probate Judge, Colbert County, Alabama.

TRACT NO. XNPT-37

A tract of land lying in Colbert County, State of Alabama, in Sec. 32, T3S, R11W, on the east side of the Spring Creek Embayment of Pickwick Landing Lake at Wilson Dam Village No. 1, and more particularly described as follows:

Beginning at an angle iron at the intersection of the southeast line of Wilson Dam Avenue and the west line of Pickwick Street; thence with the west line of Pickwick Street S. 1° 46' E., 173.8 feet to an angle iron in the north line of Douglas Street; thence with the north line of Douglas Street S. 85° 33' W., 217.9 feet to an angle iron in the southeast line of Wilson Dam Avenue; thence with the southeast line of the avenue N. 48° 00' E., 284.9 feet to the point of beginning, and containing 0.44 acre, more or less.

The positions of corners and directions of lines are referred to the Alabama (West) Coordinate System.

The above described tract of land was acquired by the United States of America by virtue of the deed from Sheffield Development Company, a corporation, dated April 17, 1918, recorded in Deed Book 28, page 158, in the office of the Probate Judge, Colbert County, Alabama.

TRACT NO. XNPT-41

A tract of land lying in Colbert County, State of Alabama, in Secs. 31 and 32, T3S, R11W, on the north shores of the Spring Creek Embayment of Pickwick Landing Lake, immediately north of Wilson Dam Village No. 1, the said tract being bounded on the lakeward side by the 423-foot contour on the shores of the lake and the embayment of the lake and on the landward side by a line described as follows:

Beginning at an angle iron (Coordinates: N. 1,727,794; E. 432,090) in the 423-foot contour on the southeast shore of Pickwick Landing Lake near the mouth of the Spring Creek Embayment of the lake; thence S. 64° 50' E., 21 feet to an angle iron; thence S. 88° 57' E., 467 feet to US-TVA Monument 42-6; thence N. 68° 12' E., 1149 feet to US-TVA Monument 42-5 which is 25 feet southwest of and opposite a point in the center line of an abandoned railroad track; thence with a line 25 feet from and parallel to the center line of the abandoned railroad track and with a curve having a radius of 385.2 feet as it curves to the right in a southeasterly direction 200 feet to an angle iron; thence S. 40° 22' E., 57 feet to an angle iron; thence with a curve having a radius of 566.3 feet as it curves to the left in a general easterly direction 942 feet to an angle iron; thence N. 44° 17' E., 569 feet, passing an angle iron at 544 feet, to an angle iron in the center line of a road; thence with the center line of the road as it meanders approximately along the following bearings and distances: S. 38° 40' E. 176 feet to an angle iron, S. 32° 29' E. 106 feet, S. 5° 21' W. 204 feet, and S. 25° 36' E. 163 feet to an angle iron; thence, leaving the road, S. 45° 54' W., 520 feet to an angle iron; thence S. 44° 06' E., 280 feet to an angle iron in the northwest line of Cherokee Pike; thence with the line of Cherokee Pike S. 45° 35' W., 200 feet to an angle iron, a corner to Lot 143 of the Wilson Dam Village No. 1 Subdivision; thence, leaving the line of the pike, N. 44° 06' W., 200.0 feet to an angle iron; thence S. 45° 54' W., 506.6 feet to an angle iron in the north right of way line of Fontana Street; thence with the right of way line of the street N. 72° 05' W., 357.7 feet to an angle iron; thence S. 83° 56' W., 679.2 feet to an angle iron; thence, leaving the right of way line of the street, N. 5° 46' E., 52.7 feet, passing an angle iron at 15.2 feet, to US-TVA Monument NP-1-72A in the 423-foot contour on the south shore of a small inlet of the lake at the mouth of the inlet.

The land as described above contains 48.7 acres, more or less.

TREES, BUSHES, UNDERGROWTH AND OTHER OBSTRUCTIONS INTERFERING WITH THE CONSTRUCTION, MAINTENANCE AND REPAIR OF PIPE LINES AND/OR MAINS ON, OVER, ACROSS, THROUGH AND UNDER THE LAND SHOWN ON THE ATTACHED EXHIBITS "A", "B" AND "C".

(3) U. S. NITRATE PLANT NO. 1 HIGHWAY AND THE WILSON DAM VILLAGE NO. 1 STREET SYSTEM TOGETHER WITH PERMANENT EASEMENTS AND RIGHTS OF WAY FOR SUCH RIGHTS AS ARE REQUIRED TO CONSTRUCT, MAINTAIN, REPAIR, AND REBUILD ALL PRESENTLY EXISTING AND PROPOSED STREETS AND HIGHWAYS IN THE LOCATIONS AND AT SUCH WIDTHS AS ARE INDICATED IN YELLOW ON THE MAPS ATTACHED.

FURTHERMORE, GRANTOR AGREES TO CONVEY TO GRANTEE ADDITIONAL RIGHTS OF WAY FOR HIGHWAY, PIPE LINE, AND ELECTRIC DISTRIBUTION LINE PURPOSES AT SUCH LOCATIONS ACROSS SPRING CREEK AND CONTIGUOUS LAND OF THE GRANTOR AS MAY BE DESIRED FROM TIME TO TIME BY GRANTEE, SUBJECT TO APPROVAL BY THE BOARD OF DIRECTORS OF THE AUTHORITY OF ANY PLANS FOR CONSTRUCTION, OPERATION, AND MAINTENANCE OF ANY STRUCTURES ON AND OVER SAID RIGHTS OF WAY IN ACCORDANCE WITH SECTION 26a OF THE TENNESSEE VALLEY AUTHORITY ACT OF 1933, AS AMENDED. SUCH CONVEYANCES SHALL NOT CONSTITUTE APPROVAL OF SUCH STRUCTURES OR IMPLY A WAIVER OF THE NECESSITY OF OBTAINING APPROVAL.

IT IS UNDERSTOOD AND AGREED THAT THOSE PORTIONS OF TRACTS XNPT-30 AND XNPT-41 LOCATED BELOW THE 445-FOOT CONTOUR ELEVATION ARE SOLD SUBJECT TO ANY TEMPORARY AND INTERMITTENT FLOODING THAT MAY RESULT FROM THE ERECTION AND OPERATION OF ANY DAM OR DAMS ACROSS THE TENNESSEE RIVER AND ITS TRIBUTARIES AND ALSO SUBJECT TO THE RIGHT TO TEMPORARILY AND INTERMITTENTLY FLOOD ANY PORTION OF ANY ROAD SERVING TRACTS XNPT-30 AND XNPT-41.

ARE HEREBY RESERVED FOR THE USE OF THE UNITED STATES, TOGETHER WITH THE RIGHT OF THE UNITED STATES THROUGH ITS AUTHORIZED AGENTS OR REPRESENTATIVES AT ANY TIME TO ENTER UPON THE LAND AND PROSPECT FOR, MINE, AND REMOVE THE SAME, MAKING JUST COMPENSATION FOR ANY DAMAGE OR INJURY OCCASIONED THEREBY, HOWEVER, SUCH LAND MAY BE USED, AND ANY RIGHTS OTHERWISE ACQUIRED BY THIS DISPOSITION MAY BE EXERCISED, AS IF NO RESERVATION OF SUCH MATERIALS HAD BEEN MADE; EXCEPT THAT, WHEN SUCH USE RESULTS IN THE EXTRACTION OF ANY SUCH MATERIAL FROM THE LAND IN QUANTITIES WHICH MAY NOT BE TRANSFERRED OR DELIVERED WITHOUT A LICENSE UNDER THE ATOMIC ENERGY ACT OF 1946, AS IT NOW EXISTS OR MAY HEREAFTER BE AMENDED, SUCH MATERIAL SHALL BE THE PROPERTY OF THE UNITED STATES ATOMIC ENERGY COMMISSION, AND THE COMMISSION MAY REQUIRE DELIVERY OF SUCH MATERIAL TO IT BY ANY POSSESSOR THEREOF AFTER SUCH MATERIAL HAS BEEN SEPARATED AS SUCH FROM THE ORES IN WHICH IT WAS CONTAINED. IF THE COMMISSION REQUIRES THE DELIVERY OF SUCH MATERIAL TO IT, IT SHALL PAY TO THE PERSON MINING OR EXTRACTING THE SAME, OR TO SUCH OTHER PERSON AS THE COMMISSION DETERMINES TO BE ENTITLED THERETO, SUCH SUMS, INCLUDING PROFITS, AS THE COMMISSION DEEMS FAIR AND REASONABLE FOR THE DISCOVERY, MINING, DEVELOPMENT, PRODUCTION, EXTRACTION, AND OTHER SERVICES PERFORMED WITH RESPECT TO SUCH MATERIAL PRIOR TO SUCH DELIVERY, BUT SUCH PAYMENT SHALL NOT INCLUDE ANY AMOUNT ON ACCOUNT OF THE VALUE OF SUCH MATERIAL BEFORE REMOVAL FROM ITS PLACE OF DEPOSIT IN NATURE. IF THE COMMISSION DOES NOT REQUIRE DELIVERY OF SUCH MATERIAL TO IT, THE RESERVATION HEREBY MADE SHALL BE OF NO FURTHER FORCE OR EFFECT.

THERE IS ALSO RESERVED TO THE GRANTOR AND ITS ASSIGNS THE THREE-STALL GARAGE BUILDING LOCATED ON TRACT XNPT-33, TOGETHER WITH THE RIGHT TO MAINTAIN THE SAID STRUCTURE IN ITS PRESENT LOCATION AND USE THE PRESENTLY EXISTING ACCESS RIGHT OF WAY FOR A PERIOD OF FOURTEEN MONTHS FROM MAY 10, 1949. PROVIDED, HOWEVER, THAT THE GRANTOR OR ITS ASSIGNS WILL REMOVE THE BUILDING FROM SAID TRACT OF LAND ON OR BEFORE THE EXPIRATION OF SAID PERIOD AND UPON FAILURE TO DO SO, TITLE TO THE SAME SHALL VEST ABSOLUTELY IN THE GRANTEE.

IN ACCEPTING THIS CONVEYANCE, HOWEVER, THE GRANTEE, FOR ITSELF, AND FOR ITS SUCCESSORS AND ASSIGNS, COVENANTS AND AGREES TO AND WITH THE GRANTOR THAT THE FOLLOWING SHALL CONSTITUTE REAL COVENANTS WHICH SHALL ATTACH TO AND RUN WITH THE ABOVE DESCRIBED LAND AND SHALL BE BINDING UPON ANYONE WHO MAY HEREAFTER COME INTO OWNERSHIP THEREOF, WHETHER BY PURCHASE, DEVISE, DESCENT, OR SUCCESSION:

IN WITNESS WHEREOF, the Tennessee Valley Authority, acting herein for itself and as legal agent of the United States of America, and being duly authorized so to do, has caused this instrument to be executed in its name and in the name of the United States of America, by its authorized officers, and its corporate seal to be hereunto affixed, on this the 4th day of May, 1949.

Attest:

John Randolph Perry
Assistant Secretary

UNITED STATES OF AMERICA

BY TENNESSEE VALLEY AUTHORITY, its legal agent

By Geo. M. Baker
Chief of Land Branch

Attest:

John Randolph Perry
Assistant Secretary

TENNESSEE VALLEY AUTHORITY

By Geo. M. Baker
Chief of Land Branch

STATE OF TENNESSEE)
)
COUNTY OF KNOX)

I, Hake Lee Mynatt, a Notary Public in and for said County in said State, hereby certify that Geo. M. Baker and John Randolph Perry whose names are signed to the foregoing conveyance as Chief of the Land Branch and Assistant Secretary, respectively, of the TENNESSEE VALLEY AUTHORITY, a corporation and legal agent for the UNITED STATES OF AMERICA, and who are known to me, acknowledged before me on this day that, being informed of the contents of the conveyance, they, as such officers and with full authority, executed the same voluntarily for and as the act and deed of said corporation and of the UNITED STATES OF AMERICA.

GIVEN under my hand this 4th day of May, 1949.

Hake Lee Mynatt
Notary Public

My Commission Expires: January 10th, 1953.

TVA 2537A (LA-4-48)
Sheet 11

This is a working tool for planners and decision-makers to use to identify the degree of potential impacts to resources that may occur as a result of federal approval of the proposal. It also serves as the administrative record documenting the applicant's efforts to identify and consider impacts during proposal development. Your ESF responses may change as the planning process refines the proposal that will ultimately be submitted along with the final completed ESF for federal review and decision.

As early as possible in your planning process, consider how your proposal/project may have direct, indirect, and cumulative impacts on the human environment. Early identification of possible environmental resource impacts can be used during proposal development and assist in identifying ways to lessen impacts. Initiating or completing environmental analysis after a decision has been made is contrary to both the spirit and letter of the law of the National Environmental Policy Act.

The ESF should be completed with input from resource experts and in consultation with relevant local, state, tribal, and federal governments, as applicable. The interested and affected public should be notified of the proposal and invited to provide input as well. At a minimum, a site inspection of the affected area must be conducted by individuals who are familiar with the type of affected resources, possess the ability to identify potential resource impacts, and know when to seek additional data when needed.

At the time of proposal submission, the completed ESF should reflect the applicant's final determination of the extent to which the proposal will impact the list of resources on the form. The results of the completed ESF will assist in the identification of the appropriate NEPA pathway to be followed, i.e., categorical exclusion (CE), environmental assessment (EA), environmental impact statement (EIS). Also, the completed ESF will identify the resource topics and issues that should be presented and analyzed in an EA or an EIS, if required.

The ESF contains two parts that must be completed, Part A. Impacts to Environmental Resources and Part B. Mandatory Criteria.

Part A: For each environmental resource topic, choose an impact estimate level (none, negligible, minor, exceeds minor) that describes the degree of potential negative impact that may occur directly, indirectly and cumulatively as a result of federal approval of your proposal. These impact levels should be used to estimate specific impact levels on each separate resource and must be accompanied with a brief explanation of how the resource might be affected, how the impact level was determined, and why the chosen impact level is appropriate. If an environmental review has already been conducted on your proposal, is still viable, and it includes planned mitigation, explain this for each applicable resource and choose an impact level as mitigated. If the resource does not apply to your proposal, mark NA in the first column. Add any relevant resources (see A24) if not included in the list.

Use a separate sheet to explain all potential adverse impacts (negligible, minor, and those exceeding minor) as well as to indicate the type of data that still needs to be determined for each of the applicable resources listed below. Describe direct, indirect, and cumulative impacts as well as any planned mitigation already addressed in previous environmental reviews.

Part B: This is a list of mandatory impact criteria that preclude the use of categorical exclusions. If you answer "yes" or "maybe" for any of the mandatory criteria, you must develop an EA or EIS regardless of your answers in Part A. Explain all "yes" and "maybe" answers on a separate sheet.

*Indicate potential for **adverse** impacts.*

A. ENVIRONMENTAL RESOURCES	**No Impacts or Not Applicable**	**Negligible Impacts**	**Minor Impacts**	**Impacts Exceed Minor** EA/EIS required	**More Data Needed to Determine** EA/EIS required
1. Geological resources: soils, bedrock, slopes, streambeds, landforms, etc.		X			
2. Air quality	X				
3. Sound (noise impacts)	X				
4. Water quality/quantity	X				
5. Stream flow characteristics	X				
6. Marine/estuarine	X				
7. Floodplains/wetlands	X				
8. Land use/ownership patterns; property values; community livability	X				
9. Circulation, transportation	X				
10. Plant/animal/fish species of special concern and habitat; state/ federal listed or proposed for listing	X				
11. Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.	X				
12. Unique or important wildlife/ wildlife habitat	X				
13. Unique or important fish/habitat	X				
14. Introduce or promote invasive species (plant or animal)	X				
15. Recreation resources, including parks, open space, conservation areas, rec. trails, facilities, services, opportunities, public access, etc.)	X				
16. Accessibility for populations with disabilities	X				
17. Overall aesthetics, special characteristics/features	X				
18. Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc.		X			
19. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure	X				
20. Minority and low-income populations	X				
21. Energy resources (geothermal, fossil fuels, etc.)	X				
22. Other agency or tribal land use plans or policies	X				
23. Land/structures with history of contamination/hazardous materials even if remediated	X				
24. Other important environmental resources that should be addressed	X				

B. MANDATORY CRITERIA If your proposal is approved, would it...	Yes	No	To be determined
1. Have significant impacts on public health or safety?		X	
2. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands, wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (E.O. 11990); floodplains (E.O 11988); and other ecologically significant or critical areas?		X	
3. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA section 102(2)(E)]?		X	
4. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?		X	
5. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?		X	
6. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?		X	
7. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office? (Attach SHPO/THPO Comments)	X		
8. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species?		X	
9. Violate a federal law, or a state, local, or tribal law or requirement imposed for the protection of the environment?		X	
10. Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898)?		X	
11. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007)?		X	
12. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area, or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?		X	
C. CATEGORICAL EXCLUSION CRITERIA			
13. Is the area previously disturbed and unlikely to result in any excavation beyond surface disturbance possibly impacting archaeology?	X		
14. Is the area regularly mowed and therefore unlikely to contain endangered species?		X	
15. Is there any surface water within direct proximity to the project which would require protection from construction impacts?	*		

Environmental Reviewers

The following individual(s) provided input in the completion of the environmental screening form. List all reviewers including name, title, agency, and field of expertise. Keep all environmental review records and data on this proposal in state compliance file for any future program review and/or audit. There must be at least one person listed here.

1. Beau Cooper, Regional Planner, NACOLG Planning & Environmental Planning
2. Brad Williams, Civil Group, Engineering & Construction BMP's
3. _____

The following individuals conducted a site inspection to verify field conditions.
List name of inspector(s), title, agency, and date(s) of inspection. There must be at least one person listed here.

1. Beau Cooper, Regional Planner, NACOLG Planning & Environmental Planning
2. Brad Williams, Civil Group, Engineering & Construction BMP's
3. _____

Signature of Chief Elected Official here:

Steven R. Stanley, Mayor
Signature

3-2-2021
Date

Environmental Checklist for Recreational Trails Program Project

County: Colbert

Project Location: Sheffield, AL

Project Sponsor/Applicant: City of Sheffield

Project Description: 8 ft wide crushed aggregate trail 1,200 ft in length

Concurrence from Alabama Historical Commission attached?	**Yes X**	**No**
Concurrence from U.S. Fish and Wildlife Services attached?	**Yes X**	**No**
Concurrence from the U.S. Army Corps of Engineers attached?	**Yes X**	**No**
Tribal Consultation attached?	**Yes X**	**No**
Was the property acquired before January 1992?	**Yes X**	**No**
If "No" explain property acquisition process (Use additional sheets if necessary):		

Note: If you have not received the concurrence letters by the application deadline, submit copies of the request letters. Concurrences over three (3) years old cannot be used and new concurrences must be obtained.

Required Letters of Concurrence and Release of Conditions

US Army Corps of Engineers

Mobile District Corps of Engineers	**Nashville District Corps of Engineers**
Chief, Regulatory Branch	Western Regulatory Field Office
Post Office Box 2288	2424 Danville Road, SW, STE N
Mobile, Alabama 36628-0001	Decatur, Alabama 35603
Phone: 251-690-2658	Phone Number: 256-350-5620

Alabama Historical Commission: Lee Anne Wofford, Deputy SHPO, Alabama Historical Commission, 468 South Perry Street, Montgomery, Alabama 36130-0900, Phone: 334-242-3184.

US Fish and Wildlife Service: Mr. Bill Pearson, Field Supervisor, US Fish and Wildlife Service, 1208-B Main Street, Daphne, Alabama 36526-4419, 251-441-5181.

Public Involvement/Citizen Participation

The Charette Approach

What is a Charette?
The term charette initially appeared in the late 1800's. Architecture students in Paris who needed to rush their drawings to the École des Beaux-Arts placed them on a cart which was called a charette. Later the word broadened its meaning to describe any intense, short-term student design project. A charette is an intensive, focused effort to develop conceptual plans within compressed, creative, high-energy sessions. In addition to the components of a workshop to listen and together envision, a charette involves production of plans and concepts based on the input of all participating interests.

From July 18 to July 22, 2011, at the invitation of the Trail of Tears Association, the cities of Tuscumbia and Sheffield, and interested stakeholders, the staff of the National Park Service - National Trails Intermountain Region, in Santa Fe, New Mexico, facilitated a design charette in Tuscumbia. The Design team consisted of Steve Burns Chavez, Landscape Architect, Coreen Kolisko, Landscape Architect, and Carol Clark, Interpretive Specialist. The goal for these few days was to complete a conceptual level design for both Tuscumbia Landing and a national historic trail retracement trail from Tuscumbia to Decatur.

On the day of the charette workshop, participants chose to work together as a single group rather than in smaller break out groups to, brainstorm, review issues, establish goals and objectives, and develop a vision for Tuscumbia Landing and Park West. This became the basis for the design team to use in developing plan alternatives.

The workshop was broken into several categories for review and discussion:

- Project goals and objectives
- Discussion and review of previously provided feedback for the scope and issues of the concept plan
- Brainstorming session on the direction and solutions for moving from ideas to implementation
- Discussion, thoughts, and feelings on all the individual topic areas that had been developed

The basic structure for this charette started with the day-long workshop, followed by an intensive two-day design development session held by the NPS team and open to any of the workshop members. During these two days the design team was joined by students and Poarch Creek Nation tribal members Sehoy and Cheryl Thrower. This team worked together day and night to create visitor use development and interpretive concepts reflecting the thoughts, goals, objectives, concerns, and ideas developed during the workshop. At the end of the two days, a plan for Tuscumbia Landing and two alternatives for Park West were drawn at the conceptual level. Perspective and elevation drawings were also sketched to provide graphic images of what the plans might look like when built.

In addition to these development concepts for Tuscumbia Landing, a plan for a "Rail with Trail" retracement trail, following the historic route and railroad line from Tuscumbia to Decatur was developed, with examples of a developed pedestrian trail, vehicular local tour routes, road signage, and interpretive sites that could be developed along the 45-mile stretch. This development concept plan has been created as a separate document. On July 22, 2011, these conceptual plans were presented to the Charette group for review.

Workshop Participants:

Name	Affiliation
Jack D. Baker	Cherokee Nation & President of Trail of Tears Association (TOTA)
Larry Beane	Russell Cave National Monument & TOTA - Alabama Chapter
Ricky Canup	Director, City of Sheffield Parks & Recreation Department
Huston Cobb, Jr.	Town of Leighton
Anne Cooper	Tuscumbia Landing Museum and Archives
Carole E. Driskell	Southeastern Anthropological Institute
Sharon Freeman	Archeologist & Secretary of TOTA - Alabama Chapter
Keena Nichelle Graham	Russell Cave National Monument
Tammy Gresham	Assistant to the Chief Fiscal Officer, Northwest-Shoals Community College
Hunter Johnson	Southeastern Anthropological Institute
Barbara Kelly	Morgan County representative, Muscle Shoals National Heritage Area
Gail King	President of TOTA –Alabama Chapter
Marty King	TOTA – Alabama Chapter
Joann Maxwell	Representative, Northwest-Shoals Community College & Shoals National Heritage Area
Thomas McKnight	Management Consultant, Humanitarian Sector
John L. McWilliams	Historian, City of Tuscumbia
Robert Perry	Chickasaw Nation
Jerra Quinton	Executive Director, TOTA
Ian Sanford	Mayor, City of Sheffield
Jen Sanford	Historian, City of Tuscumbia
Richard Sheridan	Historian, City of Sheffield
Bill Shoemaker	Mayor, City of Tuscumbia
Luke Slaton	Executive Director, Lawrence Country Industrial Development
Shannon Sloan	TOTA – Alabama Chapter
Steve Stanley	Councilman District 5, City of Sheffield
Allen Stover	Community development coordinator, City of Decatur
Robert Thrower	Poarch Band of Creek Indians
Sehoy Thrower	Poarch Band of Creek Indians
Cheryl Thrower	Poarch Band of Creek Indians
C.T. Wilson	Northwest-Shoals Community College

Many thanks to all of the stakeholders who participated in this effort!

Goals For Tuscumbia Landing:

The following goals were identified during the project design charette:

Preserve the historical and natural resources of the site, and provide visitors an opportunity to view and experience this unique and authentic historic place.

Connect visitors through site design and interpretation to the unique history and nature of Tuscumbia Landing as a rare surviving site that enables one to understand and appreciate early transportation and industry, the site's historical importance, and its influence and role in Indian removal.

Bring an understanding and appreciation of the historical character and significance of Tuscumbia Landing "to life" through effective interpretive and site design techniques to visitors who may have little knowledge of the site's history and importance, or of Cherokee, Creek, and Chickasaw removal.

Objectives For Tuscumbia Landing:

The following objectives were identified during the project design charette:

- **Develop overall conceptual level site plans and development alternatives with a preferred alternative for a development concept plan vision for the:**
  - Tuscumbia Landing site
  - Relationship of the surrounding communities to the site
  - Possible retracement trail from Decatur to Tuscumbia landing along the historic Tuscumbia, Courtland and Decatur Railroad.
- **Site Development Concept Plan should:**
  - Create a respectful atmosphere that is sensitive to the history of the place.
  - Create a place to welcome the tribes back home, creating a "full circle"
  - Represent Tuscumbia Landing as a place of hope
  - Keep the natural beauty and quiet nature of the site preserved
  - Preserve the sacredness of the site
- **Develop schematic level plans for appropriate development to define the visitor use and experience of priority interpretive sites, particularly the landing site and bluff, and their connections to Park West and the historic rail line.**
- **Develop schematic level plans for specific selected site areas to address resource or visitor use issues that may be associated with those areas.**
- Develop interpretive goals, objectives, themes, exhibit concepts/ alternatives for the Tuscumbia Landing site as well as the historic railroad from Decatur to Tuscumbia
- Interpretation should:
  - Tell the story for all three tribes who crossed through the landing site.
  - Emphasize the larger stories of the Cherokee, Chickasaw, and Creek removals
  - Represent American Indian methods and forms of teaching at the site
  - Give Tuscumbia Landing meaning and connect visitors and locals to its diverse history
  - Tell the story of the railroad, Civil War, and nitrate plant, but keep it secondary to the story of removal
- Interpret the experience of steam boat, wagon, flat boat, keel boat transportation in general and as experienced by removed American Indians.
- Develop alternatives/recommendations for the Tuscumbia Landing visitor experience, facility development, and interpretive media
- Develop alternatives/recommendations for the historic railroad from Decatur to Tuscumbia visitor experience, facility development, and interpretive media
- Develop preferred Trail of Tears route directional and site entry signing concepts
- Develop realistic budget and cost scenarios and constraints for implementation
- Explore fund-raising and implementation strategies